

Impairment of Assets

SB-FRS 36 *Impairment of Assets* applies to Statutory Boards for annual periods beginning on or after 1 January 2009.

This Standard is equivalent to FRS 36 *Impairment of Assets* by the Council on Corporate Disclosure and Governance on 22 February 2007.

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Statutory Board Financial Reporting Standard 36 *Impairment of Assets* (SB-FRS 36) is set out in paragraphs 1-141 and Appendices A and B. All the paragraphs have equal authority. SB-FRS 36 should be read in the context of its objective, the *Preface to Statutory Board Financial Reporting Standards* and the *Framework for the Preparation and Presentation of Financial Statements*. SB-FRS 8 *Accounting Policies, Changes in Accounting Estimates and Errors* provides a basis for selecting and applying accounting policies in the absence of explicit guidance.

Statutory Board Financial Reporting Standard FRS 36

Impairment of Assets

Objective

1. The objective of this Standard is to prescribe the procedures that an entity applies to ensure that its assets are carried at no more than their recoverable amount. An asset is carried at more than its recoverable amount if its carrying amount exceeds the amount to be recovered through use or sale of the asset. If this is the case, the asset is described as impaired and the Standard requires the entity to recognise an impairment loss. The Standard also specifies when an entity should reverse an impairment loss and prescribes disclosures.

Scope

2. ***This Standard shall be applied in accounting for the impairment of all assets, other than:***
 - (a) ***inventories (see SB-FRS 2 Inventories);***
 - (b) ***assets arising from construction contracts (see SB-FRS 11 Construction Contracts);***
 - (c) ***deferred tax assets (see SB-FRS 12 Income Taxes);***
 - (d) ***assets arising from employee benefits (see SB-FRS 19 Employee Benefits);***
 - (e) ***financial assets that are within the scope of SB-FRS 39 Financial Instruments: Recognition and Measurement;***
 - (f) ***investment property that is measured at fair value (see SB-FRS 40 Investment Property);***
 - (g) ***biological assets related to agricultural activity that are measured at fair value less estimated point-of-sale costs (see SB-FRS 41 Agriculture);***
 - (h) ***deferred acquisition costs, and intangible assets, arising from an insurer's contractual rights under insurance contracts within the scope of SB-FRS 104 Insurance Contracts; and***
 - (i) ***non-current assets (or disposal groups) classified as held for sale in accordance with SB-FRS 105 Non-current Assets Held for Sale and Discontinued Operations.***
3. This Standard does not apply to inventories, assets arising from construction contracts, deferred tax assets, assets arising from employee benefits, or assets classified as held for sale (or included in a disposal group that is classified as held for sale) because existing Standards applicable to these assets contain requirements for recognising and measuring these assets.
4. This Standard applies to financial assets classified as:
 - (a) subsidiaries, as defined in SB-FRS 27 *Consolidated and Separate Financial Statements*;
 - (b) associates, as defined in SB-FRS 28 *Investments in Associates*; and
 - (c) joint ventures, as defined in SB-FRS 31 *Interests in Joint Ventures*.

For impairment of other financial assets, refer to SB-FRS 39.

5. This Standard does not apply to financial assets within the scope of SB-FRS 39, investment property measured at fair value in accordance with SB-FRS 40, or biological assets related to agricultural activity measured at fair value less estimated point-of-sale costs in accordance with SB-FRS 41. However, this Standard applies to assets that are carried at revalued amount (i.e. fair value) in accordance with other Standards, such as the revaluation model in SB-FRS 16 *Property, Plant and Equipment*. Identifying whether a revalued asset may be impaired depends on the basis used to determine fair value:
- (a) if the asset's fair value is its market value, the only difference between the asset's fair value and its fair value less costs to sell is the direct incremental costs to dispose of the asset:
 - (i) if the disposal costs are negligible, the recoverable amount of the revalued asset is necessarily close to, or greater than, its revalued amount (i.e. fair value). In this case, after the revaluation requirements have been applied, it is unlikely that the revalued asset is impaired and recoverable amount need not be estimated.
 - (ii) if the disposal costs are not negligible, the fair value less costs to sell of the revalued asset is necessarily less than its fair value. Therefore, the revalued asset will be impaired if its value in use is less than its revalued amount (i.e. fair value). In this case, after the revaluation requirements have been applied, an entity applies this Standard to determine whether the asset may be impaired.
 - (b) if the asset's fair value is determined on a basis other than its market value, its revalued amount (i.e. fair value) may be greater or lower than its recoverable amount. Hence, after the revaluation requirements have been applied, an entity applies this Standard to determine whether the asset may be impaired.

Definitions

6. *The following terms are used in this Standard with the meanings specified:*

An active market is a market in which all the following conditions exist:

- (a) the items traded within the market are homogeneous;***
- (b) willing buyers and sellers can normally be found at any time; and***
- (c) prices are available to the public.***

The agreement date for a business combination is the date that a substantive agreement between the combining parties is reached and, in the case of publicly listed entities, announced to the public. In the case of a hostile takeover, the earliest date that a substantive agreement between the combining parties is reached is the date that a sufficient number of the acquiree's owners have accepted the acquirer's offer for the acquirer to obtain control of the acquiree.

Carrying amount is the amount at which an asset is recognised after deducting any accumulated depreciation (amortisation) and accumulated impairment losses thereon.

A cash-generating unit is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets.

Corporate assets are assets other than goodwill that contribute to the future cash flows of both the cash-generating unit under review and other cash-generating units.

Costs of disposal are incremental costs directly attributable to the disposal of an asset or cash-generating unit, excluding finance costs and income tax expense.

Depreciable amount is the cost of an asset, or other amount substituted for cost in the financial statements, less its residual value.

Depreciation (Amortisation) is the systematic allocation of the depreciable amount of an asset over its useful life.*

Fair value less costs to sell is the amount obtainable from the sale of an asset or cash-generating unit in an arm's length transaction between knowledgeable, willing parties, less the costs of disposal.

An ***impairment loss*** is the amount by which the carrying amount of an asset or a cash-generating unit exceeds its recoverable amount.

The ***recoverable amount*** of an asset or a cash-generating unit is the higher of its fair value less costs to sell and its value in use.

Useful life is either:

- (a) the period of time over which an asset is expected to be used by the entity; or
- (b) the number of production or similar units expected to be obtained from the asset by the entity.

Value in use is the present value of the future cash flows expected to be derived from an asset or cash-generating unit.

Identifying an Asset that may be Impaired

7. Paragraphs 8-17 specify when recoverable amount shall be determined. These requirements use the term 'an asset' but apply equally to an individual asset or a cash-generating unit. The remainder of this Standard is structured as follows:
 - (a) paragraphs 18-57 set out the requirements for measuring recoverable amount. These requirements also use the term 'an asset' but apply equally to an individual asset and a cash-generating unit.
 - (b) paragraphs 58-108 set out the requirements for recognising and measuring impairment losses. Recognition and measurement of impairment losses for individual assets other than goodwill are dealt with in paragraphs 58-64. Paragraphs 65-108 deal with the recognition and measurement of impairment losses for cash-generating units and goodwill.
 - (c) paragraphs 109-116 set out the requirements for reversing an impairment loss recognised in prior periods for an asset or a cash-generating unit. Again, these requirements use the term 'an asset' but apply equally to an individual asset or a cash-generating unit. Additional requirements for an individual asset are set out in paragraphs 117-121, for a cash-generating unit in paragraphs 122 and 123, and for goodwill in paragraphs 124 and 125.
 - (d) paragraphs 126-133 specify the information to be disclosed about impairment losses and reversals of impairment losses for assets and cash-generating units. Paragraphs 134-137 specify additional disclosure requirements for cash-generating units to which goodwill or intangible assets with indefinite useful lives have been allocated for impairment testing purposes.

* In the case of an intangible asset, the term 'amortisation' is generally used instead of 'depreciation'. The two terms have the same meaning.

8. An asset is impaired when its carrying amount exceeds its recoverable amount. Paragraphs 12-14 describe some indications that an impairment loss may have occurred. If any of those indications is present, an entity is required to make a formal estimate of recoverable amount. Except as described in paragraph 10, this Standard does not require an entity to make a formal estimate of recoverable amount if no indication of an impairment loss is present.
9. ***An entity shall assess at each reporting date whether there is any indication that an asset may be impaired. If any such indication exists, the entity shall estimate the recoverable amount of the asset.***
10. ***Irrespective of whether there is any indication of impairment, an entity shall also:***
- (a) ***test an intangible asset with an indefinite useful life or an intangible asset not yet available for use for impairment annually by comparing its carrying amount with its recoverable amount. This impairment test may be performed at any time during an annual period, provided it is performed at the same time every year. Different intangible assets may be tested for impairment at different times. However, if such an intangible asset was initially recognised during the current annual period, that intangible asset shall be tested for impairment before the end of the current annual period.***
 - (b) ***test goodwill acquired in a business combination for impairment annually in accordance with paragraphs 80-99.***
11. The ability of an intangible asset to generate sufficient future economic benefits to recover its carrying amount is usually subject to greater uncertainty before the asset is available for use than after it is available for use. Therefore, this Standard requires an entity to test for impairment, at least annually, the carrying amount of an intangible asset that is not yet available for use.
12. ***In assessing whether there is any indication that an asset may be impaired, an entity shall consider, as a minimum, the following indications:***

External sources of information

- (a) ***during the period, an asset's market value has declined significantly more than would be expected as a result of the passage of time or normal use.***
- (b) ***significant changes with an adverse effect on the entity have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the entity operates or in the market to which an asset is dedicated.***
- (c) ***market interest rates or other market rates of return on investments have increased during the period, and those increases are likely to affect the discount rate used in calculating an asset's value in use and decrease the asset's recoverable amount materially.***
- (d) ***the carrying amount of the net assets of the entity is more than its market capitalisation.***

Internal sources of information

- (e) ***evidence is available of obsolescence or physical damage of an asset.***
- (f) ***significant changes with an adverse effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, an asset is used or is expected to be used. These changes include the asset becoming idle, plans to discontinue or restructure the operation to which an asset belongs, plans to dispose of an***

asset before the previously expected date, and reassessing the useful life of an asset as finite rather than indefinite.*

(g) *evidence is available from internal reporting that indicates that the economic performance of an asset is, or will be, worse than expected.*

13. The list in paragraph 12 is not exhaustive. An entity may identify other indications that an asset may be impaired and these would also require the entity to determine the asset's recoverable amount or, in the case of goodwill, perform an impairment test in accordance with paragraphs 80-99.
14. Evidence from internal reporting that indicates that an asset may be impaired includes the existence of:
 - (a) cash flows for acquiring the asset, or subsequent cash needs for operating or maintaining it, that are significantly higher than those originally budgeted;
 - (b) actual net cash flows or operating profit or loss flowing from the asset that are significantly worse than those budgeted;
 - (c) a significant decline in budgeted net cash flows or operating profit, or a significant increase in budgeted loss, flowing from the asset; or
 - (d) operating losses or net cash outflows for the asset, when current period amounts are aggregated with budgeted amounts for the future.
15. As indicated in paragraph 10, this Standard requires an intangible asset with an indefinite useful life or not yet available for use and goodwill to be tested for impairment, at least annually. Apart from when the requirements in paragraph 10 apply, the concept of materiality applies in identifying whether the recoverable amount of an asset needs to be estimated. For example, if previous calculations show that an asset's recoverable amount is significantly greater than its carrying amount, the entity need not re-estimate the asset's recoverable amount if no events have occurred that would eliminate that difference. Similarly, previous analysis may show that an asset's recoverable amount is not sensitive to one (or more) of the indications listed in paragraph 12.
16. As an illustration of paragraph 15, if market interest rates or other market rates of return on investments have increased during the period, an entity is not required to make a formal estimate of an asset's recoverable amount in the following cases:
 - (a) if the discount rate used in calculating the asset's value in use is unlikely to be affected by the increase in these market rates. For example, increases in short-term interest rates may not have a material effect on the discount rate used for an asset that has a long remaining useful life.
 - (b) if the discount rate used in calculating the asset's value in use is likely to be affected by the increase in these market rates but previous sensitivity analysis of recoverable amount shows that:
 - (i) it is unlikely that there will be a material decrease in recoverable amount because future cash flows are also likely to increase (e.g. in some cases, an entity may be able to demonstrate that it adjusts its revenues to compensate for any increase in market rates); or
 - (ii) the decrease in recoverable amount is unlikely to result in a material impairment loss.
17. If there is an indication that an asset may be impaired, this may indicate that the remaining useful life, the depreciation (amortisation) method or the residual value for the asset needs to

* Once an asset meets the criteria to be classified as held for sale (or is included in a disposal group that is classified as held for sale), it is excluded from the scope of this Standard and is accounted for in accordance with SB-FRS 105 *Non-current Assets Held for Sale and Discontinued Operations*.

be reviewed and adjusted in accordance with the Standard applicable to the asset, even if no impairment loss is recognised for the asset.

Measuring Recoverable Amount

18. This Standard defines recoverable amount as the higher of an asset's or cash-generating unit's fair value less costs to sell and its value in use. Paragraphs 19-57 set out the requirements for measuring recoverable amount. These requirements use the term 'an asset' but apply equally to an individual asset or a cash-generating unit.
19. It is not always necessary to determine both an asset's fair value less costs to sell and its value in use. If either of these amounts exceeds the asset's carrying amount, the asset is not impaired and it is not necessary to estimate the other amount.
20. It may be possible to determine fair value less costs to sell, even if an asset is not traded in an active market. However, sometimes it will not be possible to determine fair value less costs to sell because there is no basis for making a reliable estimate of the amount obtainable from the sale of the asset in an arm's length transaction between knowledgeable and willing parties. In this case, the entity may use the asset's value in use as its recoverable amount.
21. If there is no reason to believe that an asset's value in use materially exceeds its fair value less costs to sell, the asset's fair value less costs to sell may be used as its recoverable amount. This will often be the case for an asset that is held for disposal. This is because the value in use of an asset held for disposal will consist mainly of the net disposal proceeds, as the future cash flows from continuing use of the asset until its disposal are likely to be negligible.
22. Recoverable amount is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. If this is the case, recoverable amount is determined for the cash-generating unit to which the asset belongs (see paragraphs 65-103), unless either:
 - (a) the asset's fair value less costs to sell is higher than its carrying amount; or
 - (b) the asset's value in use can be estimated to be close to its fair value less costs to sell and fair value less costs to sell can be determined.
23. In some cases, estimates, averages and computational short cuts may provide reasonable approximations of the detailed computations illustrated in this Standard for determining fair value less costs to sell or value in use.

Measuring the Recoverable Amount of an Intangible Asset with an Indefinite Useful Life

24. Paragraph 10 requires an intangible asset with an indefinite useful life to be tested for impairment annually by comparing its carrying amount with its recoverable amount, irrespective of whether there is any indication that it may be impaired. However, the most recent detailed calculation of such an asset's recoverable amount made in a preceding period may be used in the impairment test for that asset in the current period, provided all of the following criteria are met:
 - (a) if the intangible asset does not generate cash inflows from continuing use that are largely independent of those from other assets or groups of assets and is therefore tested for impairment as part of the cash-generating unit to which it belongs, the assets and liabilities making up that unit have not changed significantly since the most recent recoverable amount calculation;
 - (b) the most recent recoverable amount calculation resulted in an amount that exceeded the asset's carrying amount by a substantial margin; and

- (c) based on an analysis of events that have occurred and circumstances that have changed since the most recent recoverable amount calculation, the likelihood that a current recoverable amount determination would be less than the asset's carrying amount is remote.

Fair Value less Costs to Sell

- 25. The best evidence of an asset's fair value less costs to sell is a price in a binding sale agreement in an arm's length transaction, adjusted for incremental costs that would be directly attributable to the disposal of the asset.
- 26. If there is no binding sale agreement but an asset is traded in an active market, fair value less costs to sell is the asset's market price less the costs of disposal. The appropriate market price is usually the current bid price. When current bid prices are unavailable, the price of the most recent transaction may provide a basis from which to estimate fair value less costs to sell, provided that there has not been a significant change in economic circumstances between the transaction date and the date as at which the estimate is made.
- 27. If there is no binding sale agreement or active market for an asset, fair value less costs to sell is based on the best information available to reflect the amount that an entity could obtain, at the balance sheet date, from the disposal of the asset in an arm's length transaction between knowledgeable, willing parties, after deducting the costs of disposal. In determining this amount, an entity considers the outcome of recent transactions for similar assets within the same industry. Fair value less costs to sell does not reflect a forced sale, unless management is compelled to sell immediately.
- 28. Costs of disposal, other than those that have been recognised as liabilities, are deducted in determining fair value less costs to sell. Examples of such costs are legal costs, stamp duty and similar transaction taxes, costs of removing the asset, and direct incremental costs to bring an asset into condition for its sale. However, termination benefits (as defined in SB-FRS 19 *Employee Benefits*) and costs associated with reducing or reorganising a business following the disposal of an asset are not direct incremental costs to dispose of the asset.
- 29. Sometimes, the disposal of an asset would require the buyer to assume a liability and only a single fair value less costs to sell is available for both the asset and the liability. Paragraph 78 explains how to deal with such cases.

Value in Use

- 30. ***The following elements shall be reflected in the calculation of an asset's value in use:***
 - (a) ***an estimate of the future cash flows the entity expects to derive from the asset;***
 - (b) ***expectations about possible variations in the amount or timing of those future cash flows;***
 - (c) ***the time value of money, represented by the current market risk-free rate of interest;***
 - (d) ***the price for bearing the uncertainty inherent in the asset; and***
 - (e) ***other factors, such as illiquidity, that market participants would reflect in pricing the future cash flows the entity expects to derive from the asset.***
- 31. Estimating the value in use of an asset involves the following steps:
 - (a) estimating the future cash inflows and outflows to be derived from continuing use of the asset and from its ultimate disposal; and
 - (b) applying the appropriate discount rate to those future cash flows.

32. The elements identified in paragraph 30(b), (d) and (e) can be reflected either as adjustments to the future cash flows or as adjustments to the discount rate. Whichever approach an entity adopts to reflect expectations about possible variations in the amount or timing of future cash flows, the result shall be to reflect the expected present value of the future cash flows, i.e. the weighted average of all possible outcomes. Appendix A provides additional guidance on the use of present value techniques in measuring an asset's value in use.

Basis for Estimates of Future Cash Flows

33. *In measuring value in use an entity shall:*

- (a) *base cash flow projections on reasonable and supportable assumptions that represent management's best estimate of the range of economic conditions that will exist over the remaining useful life of the asset. Greater weight shall be given to external evidence.***
 - (b) *base cash flow projections on the most recent financial budgets/forecasts approved by management, but shall exclude any estimated future cash inflows or outflows expected to arise from future restructurings or from improving or enhancing the asset's performance. Projections based on these budgets/forecasts shall cover a maximum period of five years, unless a longer period can be justified.***
 - (c) *estimate cash flow projections beyond the period covered by the most recent budgets/forecasts by extrapolating the projections based on the budgets/forecasts using a steady or declining growth rate for subsequent years, unless an increasing rate can be justified. This growth rate shall not exceed the long-term average growth rate for the products, industries, or country or countries in which the entity operates, or for the market in which the asset is used, unless a higher rate can be justified.***
34. Management assesses the reasonableness of the assumptions on which its current cash flow projections are based by examining the causes of differences between past cash flow projections and actual cash flows. Management shall ensure that the assumptions on which its current cash flow projections are based are consistent with past actual outcomes, provided the effects of subsequent events or circumstances that did not exist when those actual cash flows were generated make this appropriate.
35. Detailed, explicit and reliable financial budgets/forecasts of future cash flows for periods longer than five years are generally not available. For this reason, management's estimates of future cash flows are based on the most recent budgets/forecasts for a maximum of five years. Management may use cash flow projections based on financial budgets/forecasts over a period longer than five years if it is confident that these projections are reliable and it can demonstrate its ability, based on past experience, to forecast cash flows accurately over that longer period.
36. Cash flow projections until the end of an asset's useful life are estimated by extrapolating the cash flow projections based on the financial budgets/forecasts using a growth rate for subsequent years. This rate is steady or declining, unless an increase in the rate matches objective information about patterns over a product or industry lifecycle. If appropriate, the growth rate is zero or negative.
37. When conditions are favourable, competitors are likely to enter the market and restrict growth. Therefore, entities will have difficulty in exceeding the average historical growth rate over the long term (say, twenty years) for the products, industries, or country or countries in which the entity operates, or for the market in which the asset is used.
38. In using information from financial budgets/forecasts, an entity considers whether the information reflects reasonable and supportable assumptions and represents management's best estimate of the set of economic conditions that will exist over the remaining useful life of the asset.

Composition of Estimates of Future Cash Flows

39. **Estimates of future cash flows shall include:**

- (a) **projections of cash inflows from the continuing use of the asset;**
- (b) **projections of cash outflows that are necessarily incurred to generate the cash inflows from continuing use of the asset (including cash outflows to prepare the asset for use) and can be directly attributed, or allocated on a reasonable and consistent basis, to the asset; and**
- (c) **net cash flows, if any, to be received (or paid) for the disposal of the asset at the end of its useful life.**

40. Estimates of future cash flows and the discount rate reflect consistent assumptions about price increases attributable to general inflation. Therefore, if the discount rate includes the effect of price increases attributable to general inflation, future cash flows are estimated in nominal terms. If the discount rate excludes the effect of price increases attributable to general inflation, future cash flows are estimated in real terms (but include future specific price increases or decreases).

41. Projections of cash outflows include those for the day-to-day servicing of the asset as well as future overheads that can be attributed directly, or allocated on a reasonable and consistent basis, to the use of the asset.

42. When the carrying amount of an asset does not yet include all the cash outflows to be incurred before it is ready for use or sale, the estimate of future cash outflows includes an estimate of any further cash outflow that is expected to be incurred before the asset is ready for use or sale. For example, this is the case for a building under construction or for a development project that is not yet completed.

43. To avoid double-counting, estimates of future cash flows do not include:

- (a) cash inflows from assets that generate cash inflows that are largely independent of the cash inflows from the asset under review (for example, financial assets such as receivables); and
- (b) cash outflows that relate to obligations that have been recognised as liabilities (for example, payables, pensions or provisions).

44. **Future cash flows shall be estimated for the asset in its current condition. Estimates of future cash flows shall not include estimated future cash inflows or outflows that are expected to arise from:**

- (a) **a future restructuring to which an entity is not yet committed; or**
- (b) **improving or enhancing the asset's performance.**

45. Because future cash flows are estimated for the asset in its current condition, value in use does not reflect:

- (a) future cash outflows or related cost savings (for example reductions in staff costs) or benefits that are expected to arise from a future restructuring to which an entity is not yet committed; or
- (b) future cash outflows that will improve or enhance the asset's performance or the related cash inflows that are expected to arise from such outflows.

46. A restructuring is a programme that is planned and controlled by management and materially changes either the scope of the business undertaken by an entity or the manner in which the business is conducted. SB-FRS 37 *Provisions, Contingent Liabilities and Contingent Assets* contains guidance clarifying when an entity is committed to a restructuring.

47. When an entity becomes committed to a restructuring, some assets are likely to be affected by this restructuring. Once the entity is committed to the restructuring:
- (a) its estimates of future cash inflows and cash outflows for the purpose of determining value in use reflect the cost savings and other benefits from the restructuring (based on the most recent financial budgets/forecasts approved by management); and
 - (b) its estimates of future cash outflows for the restructuring are included in a restructuring provision in accordance with SB-FRS 37.

Illustrative Example 5 illustrates the effect of a future restructuring on a value in use calculation.

48. Until an entity incurs cash outflows that improve or enhance the asset's performance, estimates of future cash flows do not include the estimated future cash inflows that are expected to arise from the increase in economic benefits associated with the cash outflow (see Illustrative Example 6).
49. Estimates of future cash flows include future cash outflows necessary to maintain the level of economic benefits expected to arise from the asset in its current condition. When a cash-generating unit consists of assets with different estimated useful lives, all of which are essential to the ongoing operation of the unit, the replacement of assets with shorter lives is considered to be part of the day-to-day servicing of the unit when estimating the future cash flows associated with the unit. Similarly, when a single asset consists of components with different estimated useful lives, the replacement of components with shorter lives is considered to be part of the day-to-day servicing of the asset when estimating the future cash flows generated by the asset.

50. *Estimates of future cash flows shall not include:*

- (a) *cash inflows or outflows from financing activities; or***
- (b) *income tax receipts or payments.***

51. Estimated future cash flows reflect assumptions that are consistent with the way the discount rate is determined. Otherwise, the effect of some assumptions will be counted twice or ignored. Because the time value of money is considered by discounting the estimated future cash flows, these cash flows exclude cash inflows or outflows from financing activities. Similarly, because the discount rate is determined on a pre-tax basis, future cash flows are also estimated on a pre-tax basis.

52. *The estimate of net cash flows to be received (or paid) for the disposal of an asset at the end of its useful life shall be the amount that an entity expects to obtain from the disposal of the asset in an arm's length transaction between knowledgeable, willing parties, after deducting the estimated costs of disposal.*

53. The estimate of net cash flows to be received (or paid) for the disposal of an asset at the end of its useful life is determined in a similar way to an asset's fair value less costs to sell, except that, in estimating those net cash flows:
- (a) an entity uses prices prevailing at the date of the estimate for similar assets that have reached the end of their useful life and have operated under conditions similar to those in which the asset will be used.
 - (b) the entity adjusts those prices for the effect of both future price increases due to general inflation and specific future price increases or decreases. However, if estimates of future cash flows from the asset's continuing use and the discount rate exclude the effect of general inflation, the entity also excludes this effect from the estimate of net cash flows on disposal.

Foreign Currency Future Cash Flows

54. Future cash flows are estimated in the currency in which they will be generated and then discounted using a discount rate appropriate for that currency. An entity translates the present value using the spot exchange rate at the date of the value in use calculation.

Discount Rate

55. ***The discount rate (rates) shall be a pre-tax rate (rates) that reflect(s) current market assessments of:***
- (a) ***the time value of money; and***
 - (b) ***the risks specific to the asset for which the future cash flow estimates have not been adjusted.***
56. A rate that reflects current market assessments of the time value of money and the risks specific to the asset is the return that investors would require if they were to choose an investment that would generate cash flows of amounts, timing and risk profile equivalent to those that the entity expects to derive from the asset. This rate is estimated from the rate implicit in current market transactions for similar assets or from the weighted average cost of capital of a listed entity that has a single asset (or a portfolio of assets) similar in terms of service potential and risks to the asset under review. However, the discount rate(s) used to measure an asset's value in use shall not reflect risks for which the future cash flow estimates have been adjusted. Otherwise, the effect of some assumptions will be double-counted.
57. When an asset-specific rate is not directly available from the market, an entity uses surrogates to estimate the discount rate. Appendix A provides additional guidance on estimating the discount rate in such circumstances.

Recognising and Measuring an Impairment Loss

58. Paragraphs 59-64 set out the requirements for recognising and measuring impairment losses for an individual asset other than goodwill. Recognising and measuring impairment losses for cash-generating units and goodwill are dealt with in paragraphs 65-108.
59. ***If, and only if, the recoverable amount of an asset is less than its carrying amount, the carrying amount of the asset shall be reduced to its recoverable amount. That reduction is an impairment loss.***
60. ***An impairment loss shall be recognised immediately in profit or loss, unless the asset is carried at revalued amount in accordance with another Standard (for example, in accordance with the revaluation model in SB-FRS 16 Property, Plant and Equipment). Any impairment loss of a revalued asset shall be treated as a revaluation decrease in accordance with that other Standard.***
61. An impairment loss on a non-revalued asset is recognised in profit or loss. However, an impairment loss on a revalued asset is recognised directly against any revaluation surplus for the asset to the extent that the impairment loss does not exceed the amount in the revaluation surplus for that same asset.
62. ***When the amount estimated for an impairment loss is greater than the carrying amount of the asset to which it relates, an entity shall recognise a liability if, and only if, that is required by another Standard.***
63. ***After the recognition of an impairment loss, the depreciation (amortisation) charge for the asset shall be adjusted in future periods to allocate the asset's revised carrying amount, less its residual value (if any), on a systematic basis over its remaining useful life.***

64. If an impairment loss is recognised, any related deferred tax assets or liabilities are determined in accordance with SB-FRS 12 *Income Taxes* by comparing the revised carrying amount of the asset with its tax base (see Illustrative Example 3).

Cash-generating Units and Goodwill

65. Paragraphs 66-108 set out the requirements for identifying the cash-generating unit to which an asset belongs and determining the carrying amount of, and recognising impairment losses for, cash-generating units and goodwill.

Identifying the Cash-generating Unit to Which an Asset Belongs

66. ***If there is any indication that an asset may be impaired, recoverable amount shall be estimated for the individual asset. If it is not possible to estimate the recoverable amount of the individual asset, an entity shall determine the recoverable amount of the cash-generating unit to which the asset belongs (the asset's cash-generating unit).***
67. The recoverable amount of an individual asset cannot be determined if:
- (a) the asset's value in use cannot be estimated to be close to its fair value less costs to sell (for example, when the future cash flows from continuing use of the asset cannot be estimated to be negligible); and
 - (b) the asset does not generate cash inflows that are largely independent of those from other assets.

In such cases, value in use and, therefore, recoverable amount, can be determined only for the asset's cash-generating unit.

Example

A mining entity owns a private railway to support its mining activities. The private railway could be sold only for scrap value and it does not generate cash inflows that are largely independent of the cash inflows from the other assets of the mine.

It is not possible to estimate the recoverable amount of the private railway because its value in use cannot be determined and is probably different from scrap value. Therefore, the entity estimates the recoverable amount of the cash-generating unit to which the private railway belongs, i.e. the mine as a whole.

68. As defined in paragraph 6, an asset's cash-generating unit is the smallest group of assets that includes the asset and generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. Identification of an asset's cash-generating unit involves judgement. If recoverable amount cannot be determined for an individual asset, an entity identifies the lowest aggregation of assets that generate largely independent cash inflows.

Example

A bus company provides services under contract with a municipality that requires minimum service on each of five separate routes. Assets devoted to each route and the cash flows from each route can be identified separately. One of the routes operates at a significant loss.

Because the entity does not have the option to curtail any one bus route, the lowest level of identifiable cash inflows that are largely independent of the cash inflows from other assets or groups of assets is the cash inflows generated by the five routes together. The cash-generating unit for each route is the bus company as a whole.

69. Cash inflows are inflows of cash and cash equivalents received from parties external to the entity. In identifying whether cash inflows from an asset (or group of assets) are largely independent of the cash inflows from other assets (or groups of assets), an entity considers various factors including how management monitors the entity's operations (such as by product lines, businesses, individual locations, districts or regional areas) or how management makes decisions about continuing or disposing of the entity's assets and operations. Illustrative Example 1 gives examples of identification of a cash-generating unit.
70. ***If an active market exists for the output produced by an asset or group of assets, that asset or group of assets shall be identified as a cash-generating unit, even if some or all of the output is used internally. If the cash inflows generated by any asset or cash-generating unit are affected by internal transfer pricing, an entity shall use management's best estimate of future price(s) that could be achieved in arm's length transactions in estimating:***
- (a) ***the future cash inflows used to determine the asset's or cash-generating unit's value in use; and***
 - (b) ***the future cash outflows used to determine the value in use of any other assets or cash-generating units that are affected by the internal transfer pricing.***
71. Even if part or all of the output produced by an asset or a group of assets is used by other units of the entity (for example, products at an intermediate stage of a production process), this asset or group of assets forms a separate cash-generating unit if the entity could sell the output on an active market. This is because the asset or group of assets could generate cash inflows that would be largely independent of the cash inflows from other assets or groups of assets. In using information based on financial budgets/forecasts that relates to such a cash-generating unit, or to any other asset or cash-generating unit affected by internal transfer pricing, an entity adjusts this information if internal transfer prices do not reflect management's best estimate of future prices that could be achieved in arm's length transactions.
72. ***Cash-generating units shall be identified consistently from period to period for the same asset or types of assets, unless a change is justified.***
73. If an entity determines that an asset belongs to a cash-generating unit different from that in previous periods, or that the types of assets aggregated for the asset's cash-generating unit have changed, paragraph 130 requires disclosures about the cash-generating unit, if an impairment loss is recognised or reversed for the cash-generating unit.

Recoverable Amount and Carrying Amount of a Cash-generating Unit

74. The recoverable amount of a cash-generating unit is the higher of the cash-generating unit's fair value less costs to sell and its value in use. For the purpose of determining the recoverable amount of a cash-generating unit, any reference in paragraphs 19-57 to 'an asset' is read as a reference to 'a cash-generating unit'.
75. ***The carrying amount of a cash-generating unit shall be determined on a basis consistent with the way the recoverable amount of the cash-generating unit is determined.***
76. The carrying amount of a cash-generating unit:
- (a) includes the carrying amount of only those assets that can be attributed directly, or allocated on a reasonable and consistent basis, to the cash-generating unit and will generate the future cash inflows used in determining the cash-generating unit's value in use; and
 - (b) does not include the carrying amount of any recognised liability, unless the recoverable amount of the cash-generating unit cannot be determined without consideration of this liability.

This is because fair value less costs to sell and value in use of a cash-generating unit are determined excluding cash flows that relate to assets that are not part of the cash-generating unit and liabilities that have been recognised (see paragraphs 28 and 43).

77. When assets are grouped for recoverability assessments, it is important to include in the cash-generating unit all assets that generate or are used to generate the relevant stream of cash inflows. Otherwise, the cash-generating unit may appear to be fully recoverable when in fact an impairment loss has occurred. In some cases, although some assets contribute to the estimated future cash flows of a cash-generating unit, they cannot be allocated to the cash-generating unit on a reasonable and consistent basis. This might be the case for goodwill or corporate assets such as head office assets. Paragraphs 80-103 explain how to deal with these assets in testing a cash-generating unit for impairment.
78. It may be necessary to consider some recognised liabilities to determine the recoverable amount of a cash-generating unit. This may occur if the disposal of a cash-generating unit would require the buyer to assume the liability. In this case, the fair value less costs to sell (or the estimated cash flow from ultimate disposal) of the cash-generating unit is the estimated selling price for the assets of the cash-generating unit and the liability together, less the costs of disposal. To perform a meaningful comparison between the carrying amount of the cash-generating unit and its recoverable amount, the carrying amount of the liability is deducted in determining both the cash-generating unit's value in use and its carrying amount.

Example

A company operates a mine in a country where legislation requires that the owner must restore the site on completion of its mining operations. The cost of restoration includes the replacement of the overburden, which must be removed before mining operations commence. A provision for the costs to replace the overburden was recognised as soon as the overburden was removed. The amount provided was recognised as part of the cost of the mine and is being depreciated over the mine's useful life. The carrying amount of the provision for restoration costs is CU500,* which is equal to the present value of the restoration costs.

The entity is testing the mine for impairment. The cash-generating unit for the mine is the mine as a whole. The entity has received various offers to buy the mine at a price of around CU800. This price reflects the fact that the buyer will assume the obligation to restore the overburden. Disposal costs for the mine are negligible. The value in use of the mine is approximately CU1,200, excluding restoration costs. The carrying amount of the mine is CU1,000.

The cash-generating unit's fair value less costs to sell is CU800. This amount considers restoration costs that have already been provided for. As a consequence, the value in use for the cash-generating unit is determined after consideration of the restoration costs and is estimated to be CU700 (CU1,200 less CU500). The carrying amount of the cash-generating unit is CU500, which is the carrying amount of the mine (CU1,000) less the carrying amount of the provision for restoration costs (CU500). Therefore, the recoverable amount of the cash-generating unit exceeds its carrying amount.

79. For practical reasons, the recoverable amount of a cash-generating unit is sometimes determined after consideration of assets that are not part of the cash-generating unit (for example, receivables or other financial assets) or liabilities that have been recognised (for example, payables, pensions and other provisions). In such cases, the carrying amount of the cash-generating unit is increased by the carrying amount of those assets and decreased by the carrying amount of those liabilities.

* In this Standard, monetary amounts are denominated in 'currency units' (CU).

Goodwill

Allocating Goodwill to Cash-generating Units

- 80. For the purpose of impairment testing, goodwill acquired in a business combination shall, from the acquisition date, be allocated to each of the acquirer's cash-generating units, or groups of cash-generating units, that are expected to benefit from the synergies of the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units or groups of units. Each unit or group of units to which the goodwill is so allocated shall:**
- (a) represent the lowest level within the entity at which the goodwill is monitored for internal management purposes; and**
 - (b) not be larger than an operating segment determined in accordance with SB-FRS 108 Operating Segments.**
81. Goodwill acquired in a business combination represents a payment made by an acquirer in anticipation of future economic benefits from assets that are not capable of being individually identified and separately recognised. Goodwill does not generate cash flows independently of other assets or groups of assets, and often contributes to the cash flows of multiple cash-generating units. Goodwill sometimes cannot be allocated on a non-arbitrary basis to individual cash-generating units, but only to groups of cash-generating units. As a result, the lowest level within the entity at which the goodwill is monitored for internal management purposes sometimes comprises a number of cash-generating units to which the goodwill relates, but to which it cannot be allocated. References in paragraphs 83-99 to a cash-generating unit to which goodwill is allocated should be read as references also to a group of cash-generating units to which goodwill is allocated.
82. Applying the requirements in paragraph 80 results in goodwill being tested for impairment at a level that reflects the way an entity manages its operations and with which the goodwill would naturally be associated. Therefore, the development of additional reporting systems is typically not necessary.
83. A cash-generating unit to which goodwill is allocated for the purpose of impairment testing may not coincide with the level at which goodwill is allocated in accordance with SB-FRS 21 *The Effects of Changes in Foreign Exchange Rates* for the purpose of measuring foreign currency gains and losses. For example, if an entity is required by SB-FRS 21 to allocate goodwill to relatively low levels for the purpose of measuring foreign currency gains and losses, it is not required to test the goodwill for impairment at that same level unless it also monitors the goodwill at that level for internal management purposes.
- 84. If the initial allocation of goodwill acquired in a business combination cannot be completed before the end of the annual period in which the business combination is effected, that initial allocation shall be completed before the end of the first annual period beginning after the acquisition date.**
85. In accordance with SB-FRS 103 *Business Combinations*, if the initial accounting for a business combination can be determined only provisionally by the end of the period in which the combination is effected, the acquirer:
- (a) accounts for the combination using those provisional values; and
 - (b) recognises any adjustments to those provisional values as a result of completing the initial accounting within twelve months of the acquisition date.

In such circumstances, it might also not be possible to complete the initial allocation of the goodwill acquired in the combination before the end of the annual period in which the combination is effected. When this is the case, the entity discloses the information required by paragraph 133.

- 86. *If goodwill has been allocated to a cash-generating unit and the entity disposes of an operation within that unit, the goodwill associated with the operation disposed of shall be:***
- (a) included in the carrying amount of the operation when determining the gain or loss on disposal; and***
 - (b) measured on the basis of the relative values of the operation disposed of and the portion of the cash-generating unit retained, unless the entity can demonstrate that some other method better reflects the goodwill associated with the operation disposed of.***

Example

An entity sells for CU100 an operation that was part of a cash-generating unit to which goodwill has been allocated. The goodwill allocated to the unit cannot be identified or associated with an asset group at a level lower than that unit, except arbitrarily. The recoverable amount of the portion of the cash-generating unit retained is CU300.

Because the goodwill allocated to the cash-generating unit cannot be non-arbitrarily identified or associated with an asset group at a level lower than that unit, the goodwill associated with the operation disposed of is measured on the basis of the relative values of the operation disposed of and the portion of the unit retained. Therefore, 25 per cent of the goodwill allocated to the cash-generating unit is included in the carrying amount of the operation that is sold.

- 87. If an entity reorganises its reporting structure in a way that changes the composition of one or more cash-generating units to which goodwill has been allocated, the goodwill shall be reallocated to the units affected. This reallocation shall be performed using a relative value approach similar to that used when an entity disposes of an operation within a cash-generating unit, unless the entity can demonstrate that some other method better reflects the goodwill associated with the reorganised units.**

Example

Goodwill had previously been allocated to cash-generating unit A. The goodwill allocated to A cannot be identified or associated with an asset group at a level lower than A, except arbitrarily. A is to be divided and integrated into three other cash-generating units, B, C and D.

Because the goodwill allocated to A cannot be non-arbitrarily identified or associated with an asset group at a level lower than A, it is reallocated to units B, C and D on the basis of the relative values of the three portions of A before those portions are integrated with B, C and D.

Testing Cash-generating Units with Goodwill for Impairment

- 88. When, as described in paragraph 81, goodwill relates to a cash-generating unit but has not been allocated to that unit, the unit shall be tested for impairment, whenever there is an indication that the unit may be impaired, by comparing the unit's carrying amount, excluding any goodwill, with its recoverable amount. Any impairment loss shall be recognised in accordance with paragraph 104.**
89. If a cash-generating unit described in paragraph 88 includes in its carrying amount an intangible asset that has an indefinite useful life or is not yet available for use and that asset can be tested for impairment only as part of the cash-generating unit, paragraph 10 requires the unit also to be tested for impairment annually.
- 90. A cash-generating unit to which goodwill has been allocated shall be tested for impairment annually, and whenever there is an indication that the unit may be impaired, by comparing the carrying amount of the unit, including the goodwill, with the recoverable amount of the unit. If the recoverable amount of the unit exceeds the carrying amount of the unit, the unit and the goodwill allocated to that unit shall be regarded as not impaired. If the carrying amount of the unit exceeds the recoverable**

amount of the unit, the entity shall recognise the impairment loss in accordance with paragraph 104.

Minority Interest

91. In accordance with SB-FRS 103, goodwill recognised in a business combination represents the goodwill acquired by a parent based on the parent's ownership interest, rather than the amount of goodwill controlled by the parent as a result of the business combination. Therefore, goodwill attributable to a minority interest is not recognised in the parent's consolidated financial statements. Accordingly, if there is a minority interest in a cash-generating unit to which goodwill has been allocated, the carrying amount of that unit comprises:

- (a) both the parent's interest and the minority interest in the identifiable net assets of the unit; and
- (b) the parent's interest in goodwill.

However, part of the recoverable amount of the cash-generating unit determined in accordance with this Standard is attributable to the minority interest in goodwill.

92. Consequently, for the purpose of impairment testing a non-wholly-owned cash-generating unit with goodwill, the carrying amount of that unit is notionally adjusted, before being compared with its recoverable amount. This is accomplished by grossing up the carrying amount of goodwill allocated to the unit to include the goodwill attributable to the minority interest. This notionally adjusted carrying amount is then compared with the recoverable amount of the unit to determine whether the cash-generating unit is impaired. If it is, the entity allocates the impairment loss in accordance with paragraph 104 first to reduce the carrying amount of goodwill allocated to the unit.

93. However, because goodwill is recognised only to the extent of the parent's ownership interest, any impairment loss relating to the goodwill is apportioned between that attributable to the parent and that attributable to the minority interest, with only the former being recognised as a goodwill impairment loss.

94. If the total impairment loss relating to goodwill is less than the amount by which the notionally adjusted carrying amount of the cash-generating unit exceeds its recoverable amount, paragraph 104 requires the remaining excess to be allocated to the other assets of the unit pro rata on the basis of the carrying amount of each asset in the unit.

95. Illustrative Example 7 illustrates the impairment testing of a non-wholly-owned cash-generating unit with goodwill.

Timing of Impairment Tests

96. The annual impairment test for a cash-generating unit to which goodwill has been allocated may be performed at any time during an annual period, provided the test is performed at the same time every year. Different cash-generating units may be tested for impairment at different times. However, if some or all of the goodwill allocated to a cash-generating unit was acquired in a business combination during the current annual period, that unit shall be tested for impairment before the end of the current annual period.

97. If the assets constituting the cash-generating unit to which goodwill has been allocated are tested for impairment at the same time as the unit containing the goodwill, they shall be tested for impairment before the unit containing the goodwill. Similarly, if the cash-generating units constituting a group of cash-generating units to which goodwill has been allocated are tested for impairment at the same time as the group of units containing the goodwill, the individual units shall be tested for impairment before the group of units containing the goodwill.

98. At the time of impairment testing a cash-generating unit to which goodwill has been allocated, there may be an indication of an impairment of an asset within the unit containing the goodwill. In such circumstances, the entity tests the asset for impairment first, and recognises any impairment loss for that asset before testing for impairment the cash-generating unit containing the goodwill. Similarly, there may be an indication of an impairment of a cash-generating unit within a group of units containing the goodwill. In such circumstances, the entity tests the cash-generating unit for impairment first, and recognises any impairment loss for that unit, before testing for impairment the group of units to which the goodwill is allocated.
99. ***The most recent detailed calculation made in a preceding period of the recoverable amount of a cash-generating unit to which goodwill has been allocated may be used in the impairment test of that unit in the current period provided all of the following criteria are met:***
- (a) ***the assets and liabilities making up the unit have not changed significantly since the most recent recoverable amount calculation;***
 - (b) ***the most recent recoverable amount calculation resulted in an amount that exceeded the carrying amount of the unit by a substantial margin; and***
 - (c) ***based on an analysis of events that have occurred and circumstances that have changed since the most recent recoverable amount calculation, the likelihood that a current recoverable amount determination would be less than the current carrying amount of the unit is remote.***

Corporate Assets

100. Corporate assets include group or divisional assets such as the building of a headquarters or a division of the entity, EDP equipment or a research centre. The structure of an entity determines whether an asset meets this Standard's definition of corporate assets for a particular cash-generating unit. The distinctive characteristics of corporate assets are that they do not generate cash inflows independently of other assets or groups of assets and their carrying amount cannot be fully attributed to the cash-generating unit under review.
101. Because corporate assets do not generate separate cash inflows, the recoverable amount of an individual corporate asset cannot be determined unless management has decided to dispose of the asset. As a consequence, if there is an indication that a corporate asset may be impaired, recoverable amount is determined for the cash-generating unit or group of cash-generating units to which the corporate asset belongs, and is compared with the carrying amount of this cash-generating unit or group of cash-generating units. Any impairment loss is recognised in accordance with paragraph 104.
102. ***In testing a cash-generating unit for impairment, an entity shall identify all the corporate assets that relate to the cash-generating unit under review. If a portion of the carrying amount of a corporate asset:***
- (a) ***can be allocated on a reasonable and consistent basis to that unit, the entity shall compare the carrying amount of the unit, including the portion of the carrying amount of the corporate asset allocated to the unit, with its recoverable amount. Any impairment loss shall be recognised in accordance with paragraph 104.***
 - (b) ***cannot be allocated on a reasonable and consistent basis to that unit, the entity shall:***
 - (i) ***compare the carrying amount of the unit, excluding the corporate asset, with its recoverable amount and recognise any impairment loss in accordance with paragraph 104;***
 - (ii) ***identify the smallest group of cash-generating units that includes the cash-generating unit under review and to which a portion of the***

carrying amount of the corporate asset can be allocated on a reasonable and consistent basis; and

- (iii) compare the carrying amount of that group of cash-generating units, including the portion of the carrying amount of the corporate asset allocated to that group of units, with the recoverable amount of the group of units. Any impairment loss shall be recognised in accordance with paragraph 104.*

103. Illustrative Example 8 illustrates the application of these requirements to corporate assets.

Impairment Loss for a Cash-generating Unit

104. *An impairment loss shall be recognised for a cash-generating unit (the smallest group of cash-generating units to which goodwill or a corporate asset has been allocated) if, and only if, the recoverable amount of the unit (group of units) is less than the carrying amount of the unit (group of units). The impairment loss shall be allocated to reduce the carrying amount of the assets of the unit (group of units) in the following order:*

- (a) first, to reduce the carrying amount of any goodwill allocated to the cash-generating unit (group of units); and*
- (b) then, to the other assets of the unit (group of units) pro rata on the basis of the carrying amount of each asset in the unit (group of units).*

These reductions in carrying amounts shall be treated as impairment losses on individual assets and recognised in accordance with paragraph 60.

105. *In allocating an impairment loss in accordance with paragraph 104, an entity shall not reduce the carrying amount of an asset below the highest of:*

- (a) its fair value less costs to sell (if determinable);*
- (b) its value in use (if determinable); and*
- (c) zero.*

The amount of the impairment loss that would otherwise have been allocated to the asset shall be allocated pro rata to the other assets of the unit (group of units).

106. If it is not practicable to estimate the recoverable amount of each individual asset of a cash-generating unit, this Standard requires an arbitrary allocation of an impairment loss between the assets of that unit, other than goodwill, because all assets of a cash-generating unit work together.

107. If the recoverable amount of an individual asset cannot be determined (see paragraph 67):

- (a) an impairment loss is recognised for the asset if its carrying amount is greater than the higher of its fair value less costs to sell and the results of the allocation procedures described in paragraphs 104 and 105; and
- (b) no impairment loss is recognised for the asset if the related cash-generating unit is not impaired. This applies even if the asset's fair value less costs to sell is less than its carrying amount.

Example

A machine has suffered physical damage but is still working, although not as well as before it was damaged. The machine's fair value less costs to sell is less than its carrying amount. The machine does not generate independent cash inflows. The smallest identifiable group of assets that includes the machine and generates cash inflows that are largely independent of the cash inflows from other assets is the production line to which the machine belongs. The recoverable amount of the production line shows that the production line taken as a whole is not impaired.

Assumption 1: budgets/forecasts approved by management reflect no commitment of management to replace the machine.

The recoverable amount of the machine alone cannot be estimated because the machine's value in use:

- (a) may differ from its fair value less costs to sell; and*
- (b) can be determined only for the cash-generating unit to which the machine belongs (the production line).*

The production line is not impaired. Therefore, no impairment loss is recognised for the machine. Nevertheless, the entity may need to reassess the depreciation period or the depreciation method for the machine. Perhaps a shorter depreciation period or a faster depreciation method is required to reflect the expected remaining useful life of the machine or the pattern in which economic benefits are expected to be consumed by the entity.

Assumption 2: budgets/forecasts approved by management reflect a commitment of management to replace the machine and sell it in the near future. Cash flows from continuing use of the machine until its disposal are estimated to be negligible.

The machine's value in use can be estimated to be close to its fair value less costs to sell. Therefore, the recoverable amount of the machine can be determined and no consideration is given to the cash-generating unit to which the machine belongs (i.e. the production line). Because the machine's fair value less costs to sell is less than its carrying amount, an impairment loss is recognised for the machine.

- 108. After the requirements in paragraphs 104 and 105 have been applied, a liability shall be recognised for any remaining amount of an impairment loss for a cash-generating unit if, and only if, that is required by another Standard.**

Reversing an Impairment Loss

109. Paragraphs 110-116 set out the requirements for reversing an impairment loss recognised for an asset or a cash-generating unit in prior periods. These requirements use the term 'an asset' but apply equally to an individual asset or a cash-generating unit. Additional requirements for an individual asset are set out in paragraphs 117-121, for a cash-generating unit in paragraphs 122 and 123 and for goodwill in paragraphs 124 and 125.
- 110. An entity shall assess at each reporting date whether there is any indication that an impairment loss recognised in prior periods for an asset other than goodwill may no longer exist or may have decreased. If any such indication exists, the entity shall estimate the recoverable amount of that asset.**

111. *In assessing whether there is any indication that an impairment loss recognised in prior periods for an asset other than goodwill may no longer exist or may have decreased, an entity shall consider, as a minimum, the following indications:*

External sources of information

- (a) *the asset's market value has increased significantly during the period.*
- (b) *significant changes with a favourable effect on the entity have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the entity operates or in the market to which the asset is dedicated.*
- (c) *market interest rates or other market rates of return on investments have decreased during the period, and those decreases are likely to affect the discount rate used in calculating the asset's value in use and increase the asset's recoverable amount materially.*

Internal sources of information

- (d) *significant changes with a favourable effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, the asset is used or is expected to be used. These changes include costs incurred during the period to improve or enhance the asset's performance or restructure the operation to which the asset belongs.*
- (e) *evidence is available from internal reporting that indicates that the economic performance of the asset is, or will be, better than expected.*

112. Indications of a potential decrease in an impairment loss in paragraph 111 mainly mirror the indications of a potential impairment loss in paragraph 12.
113. If there is an indication that an impairment loss recognised for an asset other than goodwill may no longer exist or may have decreased, this may indicate that the remaining useful life, the depreciation (amortisation) method or the residual value may need to be reviewed and adjusted in accordance with the Standard applicable to the asset, even if no impairment loss is reversed for the asset.
- 114. *An impairment loss recognised in prior periods for an asset other than goodwill shall be reversed if, and only if, there has been a change in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognised. If this is the case, the carrying amount of the asset shall, except as described in paragraph 117, be increased to its recoverable amount. That increase is a reversal of an impairment loss.***
115. A reversal of an impairment loss reflects an increase in the estimated service potential of an asset, either from use or from sale, since the date when an entity last recognised an impairment loss for that asset. Paragraph 130 requires an entity to identify the change in estimates that causes the increase in estimated service potential. Examples of changes in estimates include:
- (a) a change in the basis for recoverable amount (i.e. whether recoverable amount is based on fair value less costs to sell or value in use);
 - (b) if recoverable amount was based on value in use, a change in the amount or timing of estimated future cash flows or in the discount rate; or
 - (c) if recoverable amount was based on fair value less costs to sell, a change in estimate of the components of fair value less costs to sell.
116. An asset's value in use may become greater than the asset's carrying amount simply because the present value of future cash inflows increases as they become closer. However, the service potential of the asset has not increased. Therefore, an impairment loss is not reversed just because of the passage of time (sometimes called the 'unwinding' of the discount), even if the recoverable amount of the asset becomes higher than its carrying amount.

Reversing an Impairment Loss for an Individual Asset

117. ***The increased carrying amount of an asset other than goodwill attributable to a reversal of an impairment loss shall not exceed the carrying amount that would have been determined (net of amortisation or depreciation) had no impairment loss been recognised for the asset in prior years.***
118. Any increase in the carrying amount of an asset other than goodwill above the carrying amount that would have been determined (net of amortisation or depreciation) had no impairment loss been recognised for the asset in prior years is a revaluation. In accounting for such a revaluation, an entity applies the Standard applicable to the asset.
119. ***A reversal of an impairment loss for an asset other than goodwill shall be recognised immediately in profit or loss, unless the asset is carried at revalued amount in accordance with another Standard (for example, the revaluation model in SB-FRS 16 Property, Plant and Equipment). Any reversal of an impairment loss of a revalued asset shall be treated as a revaluation increase in accordance with that other Standard.***
120. A reversal of an impairment loss on a revalued asset is credited directly to equity under the heading revaluation surplus. However, to the extent that an impairment loss on the same revalued asset was previously recognised in profit or loss, a reversal of that impairment loss is also recognised in profit or loss.
121. ***After a reversal of an impairment loss is recognised, the depreciation (amortisation) charge for the asset shall be adjusted in future periods to allocate the asset's revised carrying amount, less its residual value (if any), on a systematic basis over its remaining useful life.***

Reversing an Impairment Loss for a Cash-generating Unit

122. ***A reversal of an impairment loss for a cash-generating unit shall be allocated to the assets of the unit, except for goodwill, pro rata with the carrying amounts of those assets. These increases in carrying amounts shall be treated as reversals of impairment losses for individual assets and recognised in accordance with paragraph 119.***
123. ***In allocating a reversal of an impairment loss for a cash-generating unit in accordance with paragraph 122, the carrying amount of an asset shall not be increased above the lower of:***
- (a) *its recoverable amount (if determinable); and*
 - (b) *the carrying amount that would have been determined (net of amortisation or depreciation) had no impairment loss been recognised for the asset in prior periods.*

The amount of the reversal of the impairment loss that would otherwise have been allocated to the asset shall be allocated pro rata to the other assets of the unit, except for goodwill.

Reversing an Impairment Loss for Goodwill

124. ***An impairment loss recognised for goodwill shall not be reversed in a subsequent period.***
125. SB-FRS 38 *Intangible Assets* prohibits the recognition of internally generated goodwill. Any increase in the recoverable amount of goodwill in the periods following the recognition of an impairment loss for that goodwill is likely to be an increase in internally generated goodwill, rather than a reversal of the impairment loss recognised for the acquired goodwill.

Disclosure

126. **An entity shall disclose the following for each class of assets:**
- (a) *the amount of impairment losses recognised in profit or loss during the period and the line item(s) of the income statement in which those impairment losses are included.*
 - (b) *the amount of reversals of impairment losses recognised in profit or loss during the period and the line item(s) of the income statement in which those impairment losses are reversed.*
 - (c) *the amount of impairment losses on revalued assets recognised directly in equity during the period.*
 - (d) *the amount of reversals of impairment losses on revalued assets recognised directly in equity during the period.*
127. A class of assets is a grouping of assets of similar nature and use in an entity's operations.
128. The information required in paragraph 126 may be presented with other information disclosed for the class of assets. For example, this information may be included in a reconciliation of the carrying amount of property, plant and equipment, at the beginning and end of the period, as required by SB-FRS 16 *Property, Plant and Equipment*.
129. **An entity that reports segment information in accordance with SB-FRS 108 Operating Segments shall disclose the following for each reportable segment:**
- (a) *the amount of impairment losses recognised in profit or loss and directly in equity during the period.*
 - (b) *the amount of reversals of impairment losses recognised in profit or loss and directly in equity during the period.*
130. **An entity shall disclose the following for each material impairment loss recognised or reversed during the period for an individual asset, including goodwill, or a cash-generating unit:**
- (a) *the events and circumstances that led to the recognition or reversal of the impairment loss.*
 - (b) *the amount of the impairment loss recognised or reversed.*
 - (c) *for an individual asset:*
 - (i) *the nature of the asset; and*
 - (ii) *if the entity reports segment information in accordance with SB-FRS 108, the reportable segment to which the asset belongs.*
 - (d) *for a cash-generating unit:*
 - (i) *a description of the cash-generating unit (such as whether it is a product line, a plant, a business operation, a geographical area, or a reportable segment as defined in SB-FRS 108);*
 - (ii) *the amount of the impairment loss recognised or reversed by class of assets and, if the entity reports segment information in accordance with SB-FRS 108, by reportable segment; and*
 - (iii) *if the aggregation of assets for identifying the cash-generating unit has changed since the previous estimate of the cash-generating unit's recoverable amount (if any), a description of the current and former way of aggregating assets and the reasons for changing the way the cash-generating unit is identified.*

- (e) *whether the recoverable amount of the asset (cash-generating unit) is its fair value less costs to sell or its value in use.*
 - (f) *if recoverable amount is fair value less costs to sell, the basis used to determine fair value less costs to sell (such as whether fair value was determined by reference to an active market).*
 - (g) *if recoverable amount is value in use, the discount rate(s) used in the current estimate and previous estimate (if any) of value in use.*
131. **An entity shall disclose the following information for the aggregate impairment losses and the aggregate reversals of impairment losses recognised during the period for which no information is disclosed in accordance with paragraph 130:**
- (a) *the main classes of assets affected by impairment losses and the main classes of assets affected by reversals of impairment losses.*
 - (b) *the main events and circumstances that led to the recognition of these impairment losses and reversals of impairment losses.*
132. An entity is encouraged to disclose assumptions used to determine the recoverable amount of assets (cash-generating units) during the period. However, paragraph 134 requires an entity to disclose information about the estimates used to measure the recoverable amount of a cash-generating unit when goodwill or an intangible asset with an indefinite useful life is included in the carrying amount of that unit.
133. ***If, in accordance with paragraph 84, any portion of the goodwill acquired in a business combination during the period has not been allocated to a cash-generating unit (group of units) at the reporting date, the amount of the unallocated goodwill shall be disclosed together with the reasons why that amount remains unallocated.***

Estimates used to Measure Recoverable Amounts of Cash-generating Units Containing Goodwill or Intangible Assets with Indefinite Useful Lives

134. **An entity shall disclose the information required by (a)-(f) for each cash-generating unit (group of units) for which the carrying amount of goodwill or intangible assets with indefinite useful lives allocated to that unit (group of units) is significant in comparison with the entity's total carrying amount of goodwill or intangible assets with indefinite useful lives:**
- (a) *the carrying amount of goodwill allocated to the unit (group of units).*
 - (b) *the carrying amount of intangible assets with indefinite useful lives allocated to the unit (group of units).*
 - (c) *the basis on which the unit's (group of units') recoverable amount has been determined (i.e. value in use or fair value less costs to sell).*
 - (d) *if the unit's (group of units') recoverable amount is based on value in use:*
 - (i) *a description of each key assumption on which management has based its cash flow projections for the period covered by the most recent budgets/forecasts. Key assumptions are those to which the unit's (group of units') recoverable amount is most sensitive.*
 - (ii) *a description of management's approach to determining the value(s) assigned to each key assumption, whether those value(s) reflect past experience or, if appropriate, are consistent with external sources of information, and, if not, how and why they differ from past experience or external sources of information.*
 - (iii) *the period over which management has projected cash flows based on financial budgets/forecasts approved by management and, when a*

period greater than five years is used for a cash-generating unit (group of units), an explanation of why that longer period is justified.

- (iv) the growth rate used to extrapolate cash flow projections beyond the period covered by the most recent budgets/forecasts, and the justification for using any growth rate that exceeds the long-term average growth rate for the products, industries, or country or countries in which the entity operates, or for the market to which the unit (group of units) is dedicated.*
- (v) the discount rate(s) applied to the cash flow projections.*
- (e) if the unit's (group of units') recoverable amount is based on fair value less costs to sell, the methodology used to determine fair value less costs to sell. If fair value less costs to sell is not determined using an observable market price for the unit (group of units), the following information shall also be disclosed:*
 - (i) a description of each key assumption on which management has based its determination of fair value less costs to sell. Key assumptions are those to which the unit's (group of units') recoverable amount is most sensitive.*
 - (ii) a description of management's approach to determining the value(s) assigned to each key assumption, whether those value(s) reflect past experience or, if appropriate, are consistent with external sources of information, and, if not, how and why they differ from past experience or external sources of information.*
- (f) if a reasonably possible change in a key assumption on which management has based its determination of the unit's (group of units') recoverable amount would cause the unit's (group of units') carrying amount to exceed its recoverable amount:*
 - (i) the amount by which the unit's (group of units') recoverable amount exceeds its carrying amount.*
 - (ii) the value assigned to the key assumption.*
 - (iii) the amount by which the value assigned to the key assumption must change, after incorporating any consequential effects of that change on the other variables used to measure recoverable amount, in order for the unit's (group of units') recoverable amount to be equal to its carrying amount.*

135. *If some or all of the carrying amount of goodwill or intangible assets with indefinite useful lives is allocated across multiple cash-generating units (groups of units), and the amount so allocated to each unit (group of units) is not significant in comparison with the entity's total carrying amount of goodwill or intangible assets with indefinite useful lives, that fact shall be disclosed, together with the aggregate carrying amount of goodwill or intangible assets with indefinite useful lives allocated to those units (groups of units). In addition, if the recoverable amounts of any of those units (groups of units) are based on the same key assumption(s) and the aggregate carrying amount of goodwill or intangible assets with indefinite useful lives allocated to them is significant in comparison with the entity's total carrying amount of goodwill or intangible assets with indefinite useful lives, an entity shall disclose that fact, together with:*

- (a) the aggregate carrying amount of goodwill allocated to those units (groups of units).*
- (b) the aggregate carrying amount of intangible assets with indefinite useful lives allocated to those units (groups of units).*
- (c) a description of the key assumption(s).*

- (d) ***a description of management's approach to determining the value(s) assigned to the key assumption(s), whether those value(s) reflect past experience or, if appropriate, are consistent with external sources of information, and, if not, how and why they differ from past experience or external sources of information.***
- (e) ***if a reasonably possible change in the key assumption(s) would cause the aggregate of the units' (groups of units') carrying amounts to exceed the aggregate of their recoverable amounts:***
 - (i) ***the amount by which the aggregate of the units' (groups of units') recoverable amounts exceeds the aggregate of their carrying amounts.***
 - (ii) ***the value(s) assigned to the key assumption(s).***
 - (iii) ***the amount by which the value(s) assigned to the key assumption(s) must change, after incorporating any consequential effects of the change on the other variables used to measure recoverable amount, in order for the aggregate of the units' (groups of units') recoverable amounts to be equal to the aggregate of their carrying amounts.***

136. The most recent detailed calculation made in a preceding period of the recoverable amount of a cash-generating unit (group of units) may, in accordance with paragraph 24 or 99, be carried forward and used in the impairment test for that unit (group of units) in the current period provided specified criteria are met. When this is the case, the information for that unit (group of units) that is incorporated into the disclosures required by paragraphs 134 and 135 relate to the carried forward calculation of recoverable amount.

137. Illustrative Example 9 illustrates the disclosures required by paragraphs 134 and 135.

Effective Date

138. *Statutory Boards' shall apply this Standard for annual periods beginning on or after 1 January 2009.*

Appendix A

Using Present Value Techniques to Measure Value in Use

This appendix is an integral part of the Standard. It provides guidance on the use of present value techniques in measuring value in use. Although the guidance uses the term 'asset', it equally applies to a group of assets forming a cash-generating unit.

The Components of a Present Value Measurement

- A1. The following elements together capture the economic differences between assets:
- (a) an estimate of the future cash flow, or in more complex cases, series of future cash flows the entity expects to derive from the asset;
 - (b) expectations about possible variations in the amount or timing of those cash flows;
 - (c) the time value of money, represented by the current market risk-free rate of interest;
 - (d) the price for bearing the uncertainty inherent in the asset; and
 - (e) other, sometimes unidentifiable, factors (such as illiquidity) that market participants would reflect in pricing the future cash flows the entity expects to derive from the asset.
- A2. This appendix contrasts two approaches to computing present value, either of which may be used to estimate the value in use of an asset, depending on the circumstances. Under the 'traditional' approach, adjustments for factors (b)-(e) described in paragraph A1 are embedded in the discount rate. Under the 'expected cash flow' approach, factors (b), (d) and (e) cause adjustments in arriving at risk-adjusted expected cash flows. Whichever approach an entity adopts to reflect expectations about possible variations in the amount or timing of future cash flows, the result should be to reflect the expected present value of the future cash flows, i.e. the weighted average of all possible outcomes.

General Principles

- A3. The techniques used to estimate future cash flows and interest rates will vary from one situation to another depending on the circumstances surrounding the asset in question. However, the following general principles govern any application of present value techniques in measuring assets:
- (a) interest rates used to discount cash flows should reflect assumptions that are consistent with those inherent in the estimated cash flows. Otherwise, the effect of some assumptions will be double-counted or ignored. For example, a discount rate of 12 per cent might be applied to contractual cash flows of a loan receivable. That rate reflects expectations about future defaults from loans with particular characteristics. That same 12 per cent rate should not be used to discount expected cash flows because those cash flows already reflect assumptions about future defaults.
 - (b) estimated cash flows and discount rates should be free from both bias and factors unrelated to the asset in question. For example, deliberately understating estimated net cash flows to enhance the apparent future profitability of an asset introduces a bias into the measurement.
 - (c) estimated cash flows or discount rates should reflect the range of possible outcomes rather than a single most likely, minimum or maximum possible amount.

Traditional and Expected Cash Flow Approaches to Present Value

Traditional Approach

- A4. Accounting applications of present value have traditionally used a single set of estimated cash flows and a single discount rate, often described as 'the rate commensurate with the risk'. In effect, the traditional approach assumes that a single discount rate convention can incorporate all the expectations about the future cash flows and the appropriate risk premium. Therefore, the traditional approach places most of the emphasis on selection of the discount rate.
- A5. In some circumstances, such as those in which comparable assets can be observed in the marketplace, a traditional approach is relatively easy to apply. For assets with contractual cash flows, it is consistent with the manner in which marketplace participants describe assets, as in 'a 12 per cent bond'.
- A6. However, the traditional approach may not appropriately address some complex measurement problems, such as the measurement of non-financial assets for which no market for the item or a comparable item exists. A proper search for 'the rate commensurate with the risk' requires analysis of at least two items—an asset that exists in the marketplace and has an observed interest rate and the asset being measured. The appropriate discount rate for the cash flows being measured must be inferred from the observable rate of interest in that other asset. To draw that inference, the characteristics of the other asset's cash flows must be similar to those of the asset being measured. Therefore, the measurer must do the following:
- (a) identify the set of cash flows that will be discounted;
 - (b) identify another asset in the marketplace that appears to have similar cash flow characteristics;
 - (c) compare the cash flow sets from the two items to ensure that they are similar (for example, are both sets contractual cash flows, or is one contractual and the other an estimated cash flow?);
 - (d) evaluate whether there is an element in one item that is not present in the other (for example, is one less liquid than the other?); and
 - (e) evaluate whether both sets of cash flows are likely to behave (i.e. vary) in a similar fashion in changing economic conditions.

Expected Cash Flow Approach

- A7. The expected cash flow approach is, in some situations, a more effective measurement tool than the traditional approach. In developing a measurement, the expected cash flow approach uses all expectations about possible cash flows instead of the single most likely cash flow. For example, a cash flow might be CU100, CU200 or CU300 with probabilities of 10 per cent, 60 per cent and 30 per cent, respectively. The expected cash flow is CU220. The expected cash flow approach thus differs from the traditional approach by focusing on direct analysis of the cash flows in question and on more explicit statements of the assumptions used in the measurement.
- A8. The expected cash flow approach also allows use of present value techniques when the timing of cash flows is uncertain. For example, a cash flow of CU1,000 may be received in one year, two years or three years with probabilities of 10 per cent, 60 per cent and 30 per cent, respectively. The example below shows the computation of expected present value in that situation.

Present value of CU1,000 in 1 year at 5% Probability	CU952.38 <u>10.00%</u>	CU95.24
Present value of CU1,000 in 2 years at 5.25% Probability	CU902.73 <u>60.00%</u>	CU541.64
Present value of CU1,000 in 3 years at 5.50% Probability	CU851.61 <u>30.00%</u>	<u>CU255.48</u>
Expected present value		<u>CU892.36</u>

- A9. The expected present value of CU892.36 differs from the traditional notion of a best estimate of CU902.73 (the 60 per cent probability). A traditional present value computation applied to this example requires a decision about which of the possible timings of cash flows to use and, accordingly, would not reflect the probabilities of other timings. This is because the discount rate in a traditional present value computation cannot reflect uncertainties in timing.
- A10. The use of probabilities is an essential element of the expected cash flow approach. Some question whether assigning probabilities to highly subjective estimates suggests greater precision than, in fact, exists. However, the proper application of the traditional approach (as described in paragraph A6) requires the same estimates and subjectivity without providing the computational transparency of the expected cash flow approach.
- A11. Many estimates developed in current practice already incorporate the elements of expected cash flows informally. In addition, accountants often face the need to measure an asset using limited information about the probabilities of possible cash flows. For example, an accountant might be confronted with the following situations:
- the estimated amount falls somewhere between CU50 and CU250, but no amount in the range is more likely than any other amount. Based on that limited information, the estimated expected cash flow is CU150 $[(50 + 250)/2]$.
 - the estimated amount falls somewhere between CU50 and CU250, and the most likely amount is CU100. However, the probabilities attached to each amount are unknown. Based on that limited information, the estimated expected cash flow is CU133.33 $[(50 + 100 + 250)/3]$.
 - the estimated amount will be CU50 (10 per cent probability), CU250 (30 per cent probability), or CU100 (60 per cent probability). Based on that limited information, the estimated expected cash flow is CU140 $[(50 \times 0.10) + (250 \times 0.30) + (100 \times 0.60)]$.
- In each case, the estimated expected cash flow is likely to provide a better estimate of value in use than the minimum, most likely or maximum amount taken alone.
- A12. The application of an expected cash flow approach is subject to a cost-benefit constraint. In some cases, an entity may have access to extensive data and may be able to develop many cash flow scenarios. In other cases, an entity may not be able to develop more than general statements about the variability of cash flows without incurring substantial cost. The entity needs to balance the cost of obtaining additional information against the additional reliability that information will bring to the measurement.
- A13. Some maintain that expected cash flow techniques are inappropriate for measuring a single item or an item with a limited number of possible outcomes. They offer an example of an asset with two possible outcomes: a 90 per cent probability that the cash flow will be CU10 and a 10 per cent probability that the cash flow will be CU1,000. They observe that the expected cash flow in that example is CU109 and criticise that result as not representing either of the amounts that may ultimately be paid.
- A14. Assertions like the one just outlined reflect underlying disagreement with the measurement objective. If the objective is accumulation of costs to be incurred, expected cash flows may not produce a representationally faithful estimate of the expected cost. However, this

Standard is concerned with measuring the recoverable amount of an asset. The recoverable amount of the asset in this example is not likely to be CU10, even though that is the most likely cash flow. This is because a measurement of CU10 does not incorporate the uncertainty of the cash flow in the measurement of the asset. Instead, the uncertain cash flow is presented as if it were a certain cash flow. No rational entity would sell an asset with these characteristics for CU10.

Discount Rate

- A15. Whichever approach an entity adopts for measuring the value in use of an asset, interest rates used to discount cash flows should not reflect risks for which the estimated cash flows have been adjusted. Otherwise, the effect of some assumptions will be double-counted.
- A16. When an asset-specific rate is not directly available from the market, an entity uses surrogates to estimate the discount rate. The purpose is to estimate, as far as possible, a market assessment of:
- (a) the time value of money for the periods until the end of the asset's useful life; and
 - (b) factors (b), (d) and (e) described in paragraph A1, to the extent those factors have not caused adjustments in arriving at estimated cash flows.
- A17. As a starting point in making such an estimate, the entity might take into account the following rates:
- (a) the entity's weighted average cost of capital determined using techniques such as the Capital Asset Pricing Model;
 - (b) the entity's incremental borrowing rate; and
 - (c) other market borrowing rates.
- A18. However, these rates must be adjusted:
- (a) to reflect the way that the market would assess the specific risks associated with the asset's estimated cash flows; and
 - (b) to exclude risks that are not relevant to the asset's estimated cash flows or for which the estimated cash flows have been adjusted.
- Consideration should be given to risks such as country risk, currency risk and price risk.
- A19. The discount rate is independent of the entity's capital structure and the way the entity financed the purchase of the asset, because the future cash flows expected to arise from an asset do not depend on the way in which the entity financed the purchase of the asset.
- A20. Paragraph 55 requires the discount rate used to be a pre-tax rate. Therefore, when the basis used to estimate the discount rate is post-tax, that basis is adjusted to reflect a pre-tax rate.
- A21. An entity normally uses a single discount rate for the estimate of an asset's value in use. However, an entity uses separate discount rates for different future periods where value in use is sensitive to a difference in risks for different periods or to the term structure of interest rates.

Appendix B

Amendment to SB-FRS 16

The amendment in this appendix shall be applied when an entity applies SB-FRS 16 Property, Plant and Equipment (as revised in 2004). It is superseded when SB-FRS 36 Impairment of Assets (as revised in 2004) becomes effective. This appendix replaces the consequential amendments made by SB-FRS 16 (as revised in 2004) to SB-FRS 36 Impairment of Assets (issued in 2003). SB-FRS 36 (as revised in 2004) incorporates the requirements of the paragraphs in this appendix. Consequently, the amendments from SB-FRS 16 (as revised in 2004) are not necessary once an entity is subject to SB-FRS 36 (as revised in 2004). Accordingly, this appendix is applicable only to entities that elect to apply SB-FRS 16 (as revised in 2004) before its effective date.

B1. SB-FRS 16 *Property, Plant and Equipment* is amended as described below.

In the Appendix, paragraph A4 is amended to read as follows:

A4. SB-FRS 36 *Impairment of Assets* (issued in 2003) is amended as described below.

In the Standard, paragraphs 4, 9, 34, 37, 38, 41, 42, 59, 96 and 104 are amended to read as follows:

4. This Standard applies to assets that are carried at revalued amount (fair value) under other Standards, such as the revaluation model in SB-FRS 16 *Property, Plant and Equipment*. However, identifying whether a revalued asset may be impaired depends on the basis used to determine fair value:

...

9. ***In assessing whether there is any indication that an asset may be impaired, an entity shall consider, as a minimum, the following indications:***

...

Internal sources of information

...

(f) ***significant changes with an adverse effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, an asset is used or is expected to be used. These changes include the asset becoming idle, plans to discontinue or restructure the operation to which an asset belongs, and plans to dispose of an asset before the previously expected date; and***

...

34. Projections of cash outflows include those for the day-to-day servicing of the asset as well as future overheads that can be attributed directly, or allocated on a reasonable and consistent basis, to the use of the asset.

37. ***Future cash flows shall be estimated for the asset in its current condition. Estimates of future cash flows shall not include estimated future cash inflows or outflows that are expected to arise from:***

...

(b) ***improving or enhancing the asset's performance.***

38. Because future cash flows are estimated for the asset in its current condition, value in use does not reflect:
- ...
- (b) future cash outflows that will improve or enhance the asset's performance or the related cash inflows that are expected to arise from such outflows.
41. Until an entity incurs cash outflows that improve or enhance the asset's performance, estimates of future cash flows do not include the estimated future cash inflows that are expected to arise from the increase in economic benefits associated with the cash outflow (see Appendix A, Example 6).
42. Estimates of future cash flows include future cash outflows necessary to maintain the level of economic benefits expected to arise from the asset in its current condition. When a cash-generating unit consists of assets with different estimated useful lives, all of which are essential to the ongoing operation of the unit, the replacement of assets with shorter lives is considered to be part of the day-to-day servicing of the unit when estimating the future cash flows associated with the unit. Similarly, when a single asset consists of components with different estimated useful lives, the replacement of components with shorter lives is considered to be part of the day-to-day servicing of the asset when estimating the future cash flows generated by the asset.
59. ***An impairment loss shall be recognised as an expense in the income statement immediately, unless the asset is carried at revalued amount under another Standard (for example, in accordance with the revaluation model in SB-FRS 16 Property, Plant and Equipment). Any impairment loss of a revalued asset shall be treated as a revaluation decrease under that other Standard.***
96. ***In assessing whether there is any indication that an impairment loss recognised for an asset in prior years may no longer exist or may have decreased, an entity shall consider, as a minimum, the following indications:***
- ...
- Internal sources of information**
- (d) ***significant changes with a favourable effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, the asset is used or is expected to be used. These changes include costs incurred during the period to improve or enhance the asset's performance or restructure the operation to which the asset belongs; and***
- ...
104. ***A reversal of an impairment loss for an asset shall be recognised as income immediately in the income statement, unless the asset is carried at revalued amount under another Standard (for example, in accordance with the revaluation model in SB-FRS 16 Property, Plant and Equipment). Any reversal of an impairment loss of a revalued asset shall be treated as a revaluation increase under that other Standard.***

In Appendix A, Example 6 is amended to read as follows:

Example 6 - Treatment of Future Costs

In this example, tax effects are ignored.

Background

- A54. At the end of 20X0, entity F tests a machine for impairment. The machine is a cash-generating unit. It is carried at depreciated historical cost and its carrying amount is CU150,000. It has an estimated remaining useful life of 10 years.
- A55. The machine's recoverable amount (i.e. higher of value in use and fair value less costs to sell) is determined on the basis of a value in use calculation. Value in use is calculated using a pre-tax discount rate of 14 per cent.
- A56. Management approved budgets reflect:
- (a) estimated costs necessary to maintain the level of economic benefit expected to arise from the machine in its current condition; and
 - (b) that in 20X4, costs of CU25,000 will be incurred to enhance the machine's performance by increasing its productive capacity.
- A57. At the end of 20X4, costs to enhance the machine's performance are incurred. The machine's estimated future cash flows reflected in the most recent management approved budgets are given in paragraph A60 and a current discount rate is the same as at the end of 20X0.

At the End of 20X0

Schedule 1. Calculation of the machine's value in use at the end of 20X0

<i>Year</i>	<i>Future cash flows</i> CU	<i>Discounted at 14%</i> CU
20X1	22,165 ⁽¹⁾	19,443
20X2	21,450 ⁽¹⁾	16,505
20X3	20,550 ⁽¹⁾	13,871
20X4	24,725 ⁽¹⁾⁽²⁾	14,639
20X5	25,325 ⁽¹⁾⁽³⁾	13,153
20X6	24,825 ⁽¹⁾⁽³⁾	11,310
20X7	24,123 ⁽¹⁾⁽³⁾	9,640
20X8	25,533 ⁽¹⁾⁽³⁾	8,951
20X9	24,234 ⁽¹⁾⁽³⁾	7,452
20X10	22,850 ⁽¹⁾⁽³⁾	6,164
Value in use		<u>121,128</u>

- (1) Includes estimated costs necessary to maintain the level of economic benefit expected to arise from the machine in its current condition.
 - (2) Excludes estimated costs to enhance the machine's performance reflected in management budgets.
 - (3) Excludes estimated benefits expected from enhancing the machine's performance reflected in management budgets.
- A58. The machine's recoverable amount (value in use) is less than its carrying amount. Therefore, F recognises an impairment loss for the machine.

Schedule 2. Calculation of the impairment loss at the end of 20X0

	<i>Machine CU</i>
Carrying amount before impairment loss	150,000
Recoverable amount (Schedule 1)	<u>121,128</u>
Impairment loss	<u>(28,872)</u>
Carrying amount after impairment loss	<u>121,128</u>

Years 20X1 - 20X3

A59. No event occurs that requires the machine's recoverable amount to be re-estimated. Therefore, no calculation of recoverable amount is required to be performed.

At the End of 20X4

A60. The costs to enhance the machine's performance are incurred. Therefore, in determining the machine's value in use, the future benefits expected from enhancing the machine's performance are considered in forecasting cash flows. This results in an increase in the estimated future cash flows used to determine value in use at the end of 20X0. As a consequence, in accordance with paragraphs 95 and 96 of SB-FRS 36, the recoverable amount of the machine is recalculated at the end of 20X4.

Schedule 3. Calculation of the machine's value in use at the end of 20X4

<i>Year</i>	<i>Future cash flows ⁽¹⁾ CU</i>	<i>Discounted at 14% CU</i>
20X5	30,321	26,597
20X6	32,750	25,200
20X7	31,721	21,411
20X8	31,950	18,917
20X9	33,100	17,191
20X10	27,999	12,756
Value in use		<u>122,072</u>

(1) Includes estimated benefits expected from enhancing the machine's performance reflected in management budgets

A61. The machine's recoverable amount (i.e. value in use) is higher than the machine's carrying amount and depreciated historical cost (see Schedule 4). Therefore, K reverses the impairment loss recognised for the machine at the end of 20X0 so that the machine is carried at depreciated historical cost.

Schedule 4. Calculation of the reversal of the impairment loss at the end of 20X4

	<i>Machine CU</i>
Carrying amount at the end of 20X0 (Schedule 2)	121,128
<i>End of 20X4</i>	
Depreciation charge (20X1 to 20X4 – Schedule 5)	(48,452)
Costs to enhance the asset's performance	<u>25,000</u>
Carrying amount before reversal	<u>97,676</u>
Recoverable amount (Schedule 3)	<u>122,072</u>
Reversal of the impairment loss	<u>17,324</u>
Carrying amount after reversal	<u>115,000</u>
Carrying amount: depreciated historical cost (Schedule 5)	115,000 ⁽¹⁾

(1) The value in use of the machine exceeds what its carrying amount would have been at depreciated historical cost. Therefore, the reversal is limited to an amount that does not result in the carrying amount of the machine exceeding depreciated historical cost.

Schedule 5. Summary of the carrying amount of the machine

<i>Year</i>	<i>Depreciated historical cost CU</i>	<i>Recoverable amount CU</i>	<i>Adjusted depreciation charge CU</i>	<i>Impairment loss CU</i>	<i>Carrying amount after impairment CU</i>
20X0	150,000	121,128	0	(28,872)	121,128
20X1	135,000	nc	(12,113)	0	109,015
20X2	120,000	nc	(12,113)	0	96,902
20X3	105,000	nc	(12,113)	0	84,789
20X4	90,000		(12,113)		
enhancement	<u>25,000</u>		-		
	<u>115,000</u>	122,072	<u>(12,113)</u>	17,324	115,000
20X5	<u>95,833</u>	nc	<u>(19,167)</u>	0	95,833

nc = not calculated as there is no indication that the impairment loss may have increased/decreased.

Illustrative Examples

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Illustrative Examples

These examples accompany, but are not part of, SB-FRS 36. All the examples assume that the entities concerned have no transactions other than those described. In the examples monetary amounts are denominated in 'currency units' (CU).

Example 1 - Identification of Cash-generating Units

The purpose of this example is:

- (a) *to indicate how cash-generating units are identified in various situations; and*
- (b) *to highlight certain factors that an entity may consider in identifying the cash-generating unit to which an asset belongs.*

A - Retail Store Chain

Background

IE1. Store X belongs to a retail store chain M. X makes all its retail purchases through M's purchasing centre. Pricing, marketing, advertising and human resources policies (except for hiring X's cashiers and sales staff) are decided by M. M also owns five other stores in the same city as X (although in different neighbourhoods) and 20 other stores in other cities. All stores are managed in the same way as X. X and four other stores were purchased five years ago and goodwill was recognised.

What is the cash-generating unit for X (X's cash-generating unit)?

Analysis

- IE2. In identifying X's cash-generating unit, an entity considers whether, for example:
- (a) internal management reporting is organised to measure performance on a store-by-store basis; and
 - (b) the business is run on a store-by-store profit basis or on a region/city basis.
- IE3. All M's stores are in different neighbourhoods and probably have different customer bases. So, although X is managed at a corporate level, X generates cash inflows that are largely independent of those of M's other stores. Therefore, it is likely that X is a cash-generating unit.
- IE4. If X's cash-generating unit represents the lowest level within M at which the goodwill is monitored for internal management purposes, M applies to that cash-generating unit the impairment test described in paragraph 90 of SB-FRS 36. If information about the carrying amount of goodwill is not available and monitored for internal management purposes at the level of X's cash-generating unit, M applies to that cash-generating unit the impairment test described in paragraph 88 of SB-FRS 36.

B - Plant for an Intermediate Step in a Production Process

Background

IE5. A significant raw material used for plant Y's final production is an intermediate product bought from plant X of the same entity. X's products are sold to Y at a transfer price that passes all margins to X. Eighty per cent of Y's final production is sold to customers outside of the entity. Sixty per cent of X's final production is sold to Y and the remaining 40 per cent is sold to customers outside of the entity.

For each of the following cases, what are the cash-generating units for X and Y?

Case 1: X could sell the products it sells to Y in an active market. Internal transfer prices are higher than market prices.

Case 2: There is no active market for the products X sells to Y.

Analysis

Case 1

- IE6. X could sell its products in an active market and, so, generate cash inflows that would be largely independent of the cash inflows from Y. Therefore, it is likely that X is a separate cash-generating unit, although part of its production is used by Y (see paragraph 70 of SB-FRS 36).
- IE7. It is likely that Y is also a separate cash-generating unit. Y sells 80 per cent of its products to customers outside of the entity. Therefore, its cash inflows can be regarded as largely independent.
- IE8. Internal transfer prices do not reflect market prices for X's output. Therefore, in determining value in use of both X and Y, the entity adjusts financial budgets/forecasts to reflect management's best estimate of future prices that could be achieved in arm's length transactions for those of X's products that are used internally (see paragraph 70 of SB-FRS 36).

Case 2

- IE9. It is likely that the recoverable amount of each plant cannot be assessed independently of the recoverable amount of the other plant because:
- (a) the majority of X's production is used internally and could not be sold in an active market. So, cash inflows of X depend on demand for Y's products. Therefore, X cannot be considered to generate cash inflows that are largely independent of those of Y.
 - (b) the two plants are managed together.
- IE10. As a consequence, it is likely that X and Y together are the smallest group of assets that generates cash inflows that are largely independent.

C - Single Product Entity

Background

- IE11. Entity M produces a single product and owns plants A, B and C. Each plant is located in a different continent. A produces a component that is assembled in either B or C. The combined capacity of B and C is not fully utilised. M's products are sold worldwide from either B or C. For example, B's production can be sold in C's continent if the products can be delivered faster from B than from C. Utilisation levels of B and C depend on the allocation of sales between the two sites.

For each of the following cases, what are the cash-generating units for A, B and C?

Case 1: There is an active market for A's products.

Case 2: There is no active market for A's products.

Analysis

Case 1

- IE12. It is likely that A is a separate cash-generating unit because there is an active market for its products (see Example B - Plant for an Intermediate Step in a Production Process, Case 1).
- IE13. Although there is an active market for the products assembled by B and C, cash inflows for B and C depend on the allocation of production across the two sites. It is unlikely that the future cash inflows for B and C can be determined individually. Therefore, it is likely that B and C together are the smallest identifiable group of assets that generates cash inflows that are largely independent.
- IE14. In determining the value in use of A and B plus C, M adjusts financial budgets/forecasts to reflect its best estimate of future prices that could be achieved in arm's length transactions for A's products (see paragraph 70 of SB-FRS 36).

Case 2

- IE15. It is likely that the recoverable amount of each plant cannot be assessed independently because:
- (a) there is no active market for A's products. Therefore, A's cash inflows depend on sales of the final product by B and C.
 - (b) although there is an active market for the products assembled by B and C, cash inflows for B and C depend on the allocation of production across the two sites. It is unlikely that the future cash inflows for B and C can be determined individually.
- IE16. As a consequence, it is likely that A, B and C together (i.e. M as a whole) are the smallest identifiable group of assets that generates cash inflows that are largely independent.

D - Magazine Titles

Background

- IE17. A publisher owns 150 magazine titles of which 70 were purchased and 80 were self-created. The price paid for a purchased magazine title is recognised as an intangible asset. The costs of creating magazine titles and maintaining the existing titles are recognised as an expense when incurred. Cash inflows from direct sales and advertising are identifiable for each magazine title. Titles are managed by customer segments. The level of advertising income for a magazine title depends on the range of titles in the customer segment to which the magazine title relates. Management has a policy to abandon old titles before the end of their economic lives and replace them immediately with new titles for the same customer segment.

What is the cash-generating unit for an individual magazine title?

Analysis

- IE18. It is likely that the recoverable amount of an individual magazine title can be assessed. Even though the level of advertising income for a title is influenced, to a certain extent, by the other titles in the customer segment, cash inflows from direct sales and advertising are identifiable for each title. In addition, although titles are managed by customer segments, decisions to abandon titles are made on an individual title basis.
- IE19. Therefore, it is likely that individual magazine titles generate cash inflows that are largely independent of each other and that each magazine title is a separate cash-generating unit.

E - Building Half-Rented to Others and Half-Occupied for Own Use

Background

IE20. M is a manufacturing company. It owns a headquarters building that used to be fully occupied for internal use. After down-sizing, half of the building is now used internally and half rented to third parties. The lease agreement with the tenant is for five years.

What is the cash-generating unit of the building?

Analysis

IE21. The primary purpose of the building is to serve as a corporate asset, supporting M's manufacturing activities. Therefore, the building as a whole cannot be considered to generate cash inflows that are largely independent of the cash inflows from the entity as a whole. So, it is likely that the cash-generating unit for the building is M as a whole.

IE22. The building is not held as an investment. Therefore, it would not be appropriate to determine the value in use of the building based on projections of future market related rents.

Example 2 - Calculation of Value in Use and Recognition of an Impairment Loss

In this example, tax effects are ignored.

Background and Calculation of Value in Use

IE23. At the end of 20X0, entity T acquires entity M for CU10,000. M has manufacturing plants in three countries.

Schedule 1. Data at the end of 20X0

<i>End of 20X0</i>	Allocation of purchase price	<i>Fair value of identifiable assets</i>	<i>Goodwill</i>
	CU	CU	CU*
Activities in Country A	3,000	2,000	1,000
Activities in Country B	2,000	1,500	500
Activities in Country C	5,000	3,500	1,500
Total	10,000	7,000	3,000

* Activities in each country represent the lowest level at which the goodwill is monitored for internal management purposes (determined as the difference between the purchase price of the activities in each country, as specified in the purchase agreement, and the fair value of the identifiable assets).

IE23A. Because goodwill has been allocated to the activities in each country, each of those activities must be tested for impairment annually or more frequently if there is any indication that it may be impaired (see paragraph 90 of SB-FRS 36).

IE24. The recoverable amounts (i.e. higher of value in use and fair value less costs to sell) of the cash-generating units are determined on the basis of value in use calculations. At the end of 20X0 and 20X1, the value in use of each cash-generating unit exceeds its carrying amount. Therefore the activities in each country and the goodwill allocated to those activities are regarded as not impaired.

IE25. At the beginning of 20X2, a new government is elected in Country A. It passes legislation significantly restricting exports of T's main product. As a result, and for the foreseeable future, T's production in Country A will be cut by 40 per cent.

IE26. The significant export restriction and the resulting production decrease require T also to estimate the recoverable amount of the Country A operations at the beginning of 20X2.

IE27. T uses straight-line depreciation over a 12-year life for the Country A identifiable assets and anticipates no residual value.

IE28. To determine the value in use for the Country A cash-generating unit (see Schedule 2), T:

- prepares cash flow forecasts derived from the most recent financial budgets/forecasts for the next five years (years 20X2-20X6) approved by management.
- estimates subsequent cash flows (years 20X7-20Y2) based on declining growth rates. The growth rate for 20X7 is estimated to be 3 per cent. This rate is lower than the average long-term growth rate for the market in Country A.
- selects a 15 per cent discount rate, which represents a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the Country A cash-generating unit.

Recognition and Measurement of Impairment Loss

- IE29. The recoverable amount of the Country A cash-generating unit is CU1,360.
- IE30. T compares the recoverable amount of the Country A cash-generating unit with its carrying amount (see Schedule 3).
- IE31. Because the carrying amount exceeds the recoverable amount by CU1,473, T recognises an impairment loss of CU1,473 immediately in profit or loss. The carrying amount of the goodwill that relates to the Country A operations is reduced to zero before reducing the carrying amount of other identifiable assets within the Country A cash-generating unit (see paragraph 104 of SB-FRS 36).
- IE32. Tax effects are accounted for separately in accordance with SB-FRS 12 *Income Taxes* (see Illustrative Example 3A).

Schedule 2. Calculation of the value in use of the Country A cash-generating unit at the beginning of 20X2

Year	Long-term growth rates	Future cash flows CU	Present value factor at 15% discount rate [§]	Discounted future cash flows CU
20X2 (n=1)		230 *	0.86957	200
20X3		253 *	0.75614	191
20X4		273 *	0.65752	180
20X5		290 *	0.57175	166
20X6		304 *	0.49718	151
20X7	3%	313 †	0.43233	135
20X8	-2%	307 †	0.37594	115
20X9	-6%	289 †	0.32690	94
20X0	-15%	245 †	0.28426	70
20X1	-25%	184 †	0.24719	45
20X2	-67%	61 †	0.21494	13
Value in use				<u>1,360</u>

* Based on management's best estimate of net cash flow projections (after the 40% cut).

† Based on an extrapolation from preceding year cash flow using declining growth rates.

§ The present value factor is calculated as $k = 1/(1+a)^n$, where a = discount rate and n = period of discount.

Schedule 3. Calculation and allocation of the impairment loss for the Country A cash-generating unit at the beginning of 20X2

<i>Beginning of 20X2</i>	<i>Goodwill</i> CU	<i>Identifiable assets</i> CU	<i>Total</i> CU
Historical cost	1,000	2,000	3,000
Accumulated depreciation (20X1)	<u>-</u>	<u>(167)</u>	<u>(167)</u>
Carrying amount	1,000	1,833	2,833
Impairment loss	<u>(1,000)</u>	<u>(473)</u>	<u>(1,473)</u>
Carrying amount after impairment loss	<u>-</u>	<u>1,360</u>	<u>1,360</u>

Example 3 - Deferred Tax Effects

A - Deferred Tax Effects of the Recognition of an Impairment Loss

Use the data for entity T as presented in Example 2, with supplementary information as provided in this example.

IE33. At the beginning of 20X2, the tax base of the identifiable assets of the Country A cash-generating unit is CU900. Impairment losses are not deductible for tax purposes. The tax rate is 40 per cent.

IE34. The recognition of an impairment loss on the assets of the Country A cash-generating unit reduces the taxable temporary difference related to those assets. The deferred tax liability is reduced accordingly.

	<i>Identifiable assets before impairment loss</i> CU	<i>Impairment loss</i> CU	<i>Identifiable assets after impairment loss</i> CU
<i>Beginning of 20X2</i>			
Carrying amount (Example 2)	1,833	(473)	1,360
Tax base	<u>900</u>	<u>-</u>	<u>900</u>
Taxable temporary difference	<u>933</u>	<u>(473)</u>	<u>460</u>
Deferred tax liability at 40%	<u>373</u>	<u>(189)</u>	<u>184</u>

IE35. In accordance with SB-FRS 12 *Income Taxes*, no deferred tax relating to the goodwill was recognised initially. Therefore, the impairment loss relating to the goodwill does not give rise to a deferred tax adjustment.

B - Recognition of an Impairment Loss Creates a Deferred Tax Asset

IE36. An entity has an identifiable asset with a carrying amount of CU1,000. Its recoverable amount is CU650. The tax rate is 30 per cent and the tax base of the asset is CU800. Impairment losses are not deductible for tax purposes. The effect of the impairment loss is as follows:

	<i>Before impairment</i> CU	<i>Effect of impairment</i> CU	<i>After impairment</i> CU
Carrying amount	1,000	(350)	650
Tax base	<u>800</u>	<u>-</u>	<u>800</u>
Taxable (deductible) temporary difference	<u>200</u>	<u>(350)</u>	<u>(150)</u>
Deferred tax liability (asset) at 30%	<u>60</u>	<u>(105)</u>	<u>(45)</u>

IE37. In accordance with SB-FRS 12, the entity recognises the deferred tax asset to the extent that it is probable that taxable profit will be available against which the deductible temporary difference can be utilised.

Example 4 - Reversal of an Impairment Loss

Use the data for entity T as presented in Example 2, with supplementary information as provided in this example. In this example, tax effects are ignored.

Background

- IE38. In 20X3, the government is still in office in Country A, but the business situation is improving. The effects of the export laws on T's production are proving to be less drastic than initially expected by management. As a result, management estimates that production will increase by 30 per cent. This favourable change requires T to re-estimate the recoverable amount of the net assets of the Country A operations (see paragraphs 110 and 111 of SB-FRS 36). The cash-generating unit for the net assets of the Country A operations is still the Country A operations.
- IE39. Calculations similar to those in Example 2 show that the recoverable amount of the Country A cash-generating unit is now CU1,910.

Reversal of Impairment Loss

- IE40. T compares the recoverable amount and the net carrying amount of the Country A cash-generating unit.

Schedule 1. Calculation of the carrying amount of the Country A cash-generating unit at the end of 20X3

	<i>Goodwill</i> CU	<i>Identifiable assets</i> CU	<i>Total</i> CU
<i>Beginning of 20X2 (Example 2)</i>			
Historical cost	1,000	2,000	3,000
Accumulated depreciation	-	(167)	(167)
Impairment loss	<u>(1,000)</u>	<u>(473)</u>	<u>(1,473)</u>
Carrying amount after impairment loss	<u>-</u>	<u>1,360</u>	<u>1,360</u>
<i>End of 20X3</i>			
Additional depreciation (2 years) *	<u>-</u>	<u>(247)</u>	<u>(247)</u>
Carrying amount	<u>-</u>	<u>1,113</u>	1,113
Recoverable amount			<u>1,910</u>
Excess of recoverable amount over carrying amount			<u>797</u>

* After recognition of the impairment loss at the beginning of 20X2, T revised the depreciation charge for the Country A identifiable assets (from CU166.7 per year to CU123.6 per year), based on the revised carrying amount and remaining useful life (11 years).

- IE41. There has been a favourable change in the estimates used to determine the recoverable amount of the Country A net assets since the last impairment loss was recognised. Therefore, in accordance with paragraph 114 of SB-FRS 36, T recognises a reversal of the impairment loss recognised in 20X2.
- IE42. In accordance with paragraphs 122 and 123 of SB-FRS 36, T increases the carrying amount of the Country A identifiable assets by CU387 (see Schedule 3), i.e. up to the lower of

recoverable amount (CU1,910) and the identifiable assets' depreciated historical cost (CU1,500) (see Schedule 2). This increase is recognised immediately in profit or loss.

IE43. In accordance with paragraph 124 of SB-FRS 36, the impairment loss on goodwill is not reversed.

Schedule 2. Determination of the depreciated historical cost of the Country A identifiable assets at the end of 20X3

	<i>Identifiable assets</i> CU
<i>End of 20X3</i>	
Historical cost	2,000
Accumulated depreciation (<i>166.7 × 3 years</i>)	<u>(500)</u>
Depreciated historical cost	<u>1,500</u>
Carrying amount (Schedule 1)	<u>1,113</u>
Difference	<u>387</u>

Schedule 3. Carrying amount of the Country A assets at the end of 20X3

	<i>Goodwill</i> CU	<i>Identifiable assets</i> CU	<i>Total</i> CU
<i>End of 20X2</i>			
Gross carrying amount	1,000	2,000	3,000
Accumulated amortisation	-	(414)	(414)
Accumulated impairment loss	<u>(1,000)</u>	<u>(473)</u>	<u>(1,473)</u>
Carrying amount	<u>-</u>	<u>1,113</u>	<u>1,113</u>
Reversal of impairment loss	<u>0</u>	<u>387</u>	<u>387</u>
Carrying amount after reversal of impairment loss	<u>-</u>	<u>1,500</u>	<u>1,500</u>

Example 5 - Treatment of a Future Restructuring

In this example, tax effects are ignored.

Background

- IE44. At the end of 20X0, entity K tests a plant for impairment. The plant is a cash-generating unit. The plant's assets are carried at depreciated historical cost. The plant has a carrying amount of CU3,000 and a remaining useful life of 10 years.
- IE45. The plant's recoverable amount (i.e. higher of value in use and fair value less costs to sell) is determined on the basis of a value in use calculation. Value in use is calculated using a pre-tax discount rate of 14 per cent.
- IE46. Management approved budgets reflect that:
- at the end of 20X3, the plant will be restructured at an estimated cost of CU100. Since K is not yet committed to the restructuring, a provision has not been recognised for the future restructuring costs.
 - there will be future benefits from this restructuring in the form of reduced future cash outflows.
- IE47. At the end of 20X2, K becomes committed to the restructuring. The costs are still estimated to be CU100 and a provision is recognised accordingly. The plant's estimated future cash flows reflected in the most recent management approved budgets are given in paragraph IE51 and a current discount rate is the same as at the end of 20X0.
- IE48. At the end of 20X3, actual restructuring costs of CU100 are incurred and paid. Again, the plant's estimated future cash flows reflected in the most recent management approved budgets and a current discount rate are the same as those estimated at the end of 20X2.

At the End of 20X0

Schedule 1. Calculation of the plant's value in use at the end of 20X0

<i>Year</i>	<i>Future cash flows CU</i>	<i>Discounted at 14% CU</i>
20X1	300	263
20X2	280	215
20X3	420 [*]	283
20X4	520 [†]	308
20X5	350 [†]	182
20X6	420 [†]	191
20X7	480 [†]	192
20X8	480 [†]	168
20X9	460 [†]	141
20X10	400 [†]	108
Value in use		<u>2,051</u>

* Excludes estimated restructuring costs reflected in management budgets.

† Excludes estimated benefits expected from the restructuring reflected in management budgets.

- IE49. The plant's recoverable amount (i.e. value in use) is less than its carrying amount. Therefore, K recognises an impairment loss for the plant.

Schedule 2. Calculation of the impairment loss at the end of 20X0

<i>End of 20X3</i>	<i>Plant</i>
	CU
Carrying amount before impairment loss	3,000
Recoverable amount (Schedule 1)	<u>2,051</u>
Impairment loss	<u>(949)</u>
Carrying amount after impairment loss	<u>2,051</u>

At the End of 20X1

IE50. No event occurs that requires the plant's recoverable amount to be re-estimated. Therefore, no calculation of the recoverable amount is required to be performed.

At the End of 20X2

IE51. The entity is now committed to the restructuring. Therefore, in determining the plant's value in use, the benefits expected from the restructuring are considered in forecasting cash flows. This results in an increase in the estimated future cash flows used to determine value in use at the end of 20X0. In accordance with paragraphs 110 and 111 of SB-FRS 36, the recoverable amount of the plant is re-determined at the end of 20X2.

Schedule 3. Calculation of the plant's value in use at the end of 20X2

<i>Year</i>	<i>Future cash flows CU</i>	<i>Discounted at 14% CU</i>
20X3	420 [†]	368
20X4	570 [†]	439
20X5	380 [†]	256
20X6	450 [†]	266
20X7	510 [†]	265
20X8	510 [†]	232
20X9	480 [†]	192
20X10	410 [†]	<u>144</u>
Value in use		<u>2,162</u>

* Excludes estimated restructuring costs because a liability has already been recognised.

† Includes estimated benefits expected from the restructuring reflected in management budgets.

IE52. The plant's recoverable amount (value in use) is higher than its carrying amount (see Schedule 4). Therefore, K reverses the impairment loss recognised for the plant at the end of 20X0.

Schedule 4. Calculation of the reversal of the impairment loss at the end of 20X2

	<i>Plant CU</i>
Carrying amount at the end of 20X0 (Schedule 2) <i>End of 20X2</i>	2,051
Depreciation charge (for 20X1 and 20X2–Schedule 5)	(410)
Carrying amount before reversal	<u>1,641</u>
Recoverable amount (Schedule 3)	<u>2,162</u>
Reversal of the impairment loss	<u>521</u>
Carrying amount after reversal	<u>2,162</u>
Carrying amount: depreciated historical cost (Schedule 5)	2,400 *

* The reversal does not result in the carrying amount of the plant exceeding what its carrying amount would have been at depreciated historical cost. Therefore, the full reversal of the impairment loss is recognised.

At the End of 20X3

IE53. There is a cash outflow of CU100 when the restructuring costs are paid. Even though a cash outflow has taken place, there is no change in the estimated future cash flows used to determine value in use at the end of 20X2. Therefore, the plant's recoverable amount is not calculated at the end of 20X3.

Schedule 5. Summary of the carrying amount of the plant

<i>End of year</i>	<i>Depreciated historical cost CU</i>	<i>Recoverable amount CU</i>	<i>Adjusted depreciation charge CU</i>	<i>Impairment loss CU</i>	<i>Carrying amount after impairment CU</i>
20X0	3,000	2,051	0	(949)	2,051
20X1	2,700	nc	(205)	0	1,846
20X2	2,400	2,162	(205)	521	2,162
20X3	2,100	nc	(270)	0	1,892

nc = not calculated as there is no indication that the impairment loss may have increased/decreased.

Example 6 - Treatment of Future Costs

In this example, tax effects are ignored.

Background

- IE54. At the end of 20X0, entity F tests a machine for impairment. The machine is a cash-generating unit. It is carried at depreciated historical cost and its carrying amount is CU150,000. It has an estimated remaining useful life of 10 years.
- IE55. The machine's recoverable amount (i.e. higher of value in use and fair value less costs to sell) is determined on the basis of a value in use calculation. Value in use is calculated using a pre-tax discount rate of 14 per cent.
- IE56. Management approved budgets reflect:
- estimated costs necessary to maintain the level of economic benefit expected to arise from the machine in its current condition; and
 - that in 20X4, costs of CU25,000 will be incurred to enhance the machine's performance by increasing its productive capacity.
- IE57. At the end of 20X4, costs to enhance the machine's performance are incurred. The machine's estimated future cash flows reflected in the most recent management approved budgets are given in paragraph IE60 and a current discount rate is the same as at the end of 20X0.

At the End of 20X0

Schedule 1. Calculation of the machine's value in use at the end of 20X0

<i>Year</i>	<i>Future cash flows</i> CU	<i>Discounted at 14%</i> CU
20X1	22,165*	19,443
20X2	21,450*	16,505
20X3	20,550*	13,871
20X4	24,725*†	14,639
20X5	25,325*§	13,153
20X6	24,825*§	11,310
20X7	24,123*§	9,640
20X8	25,533*§	8,951
20X9	24,234*§	7,452
20X10	22,850*§	6,164
Value in use		<u>121,128</u>

* Includes estimated costs necessary to maintain the level of economic benefit expected to arise from the machine in its current condition.

† Excludes estimated costs to enhance the machine's performance reflected in management budgets.

§ Excludes estimated benefits expected from enhancing the machine's performance reflected in management budgets.

- IE58. The machine's recoverable amount (value in use) is less than its carrying amount. Therefore, F recognises an impairment loss for the machine.

Schedule 2. Calculation of the impairment loss at the end of 20X0

	<i>Machine</i>
	<i>CU</i>
Carrying amount before impairment loss	150,000
Recoverable amount (Schedule 1)	<u>121,128</u>
Impairment loss	<u>(28,872)</u>
Carrying amount after impairment loss	<u>121,128</u>

Years 20X1 - 20X3

IE59 No event occurs that requires the machine's recoverable amount to be re-estimated. Therefore, no calculation of recoverable amount is required to be performed.

At the End of 20X4

IE60. The costs to enhance the machine's performance are incurred. Therefore, in determining the machine's value in use, the future benefits expected from enhancing the machine's performance are considered in forecasting cash flows. This results in an increase in the estimated future cash flows used to determine value in use at the end of 20X0. As a consequence, in accordance with paragraphs 110 and 111 of SB-FRS 36, the recoverable amount of the machine is recalculated at the end of 20X4.

Schedule 3. Calculation of the machine's value in use at the end of 20X4

<i>Year</i>	<i>Future cash flows*</i>	<i>Discounted at 14%</i>
	<i>CU</i>	<i>CU</i>
20X5	20,321	26,597
20X6	32,750	25,200
20X7	31,721	21,411
20X8	31,950	18,917
20X9	33,100	17,191
20X10	27,999	<u>12,756</u>
Value in use		<u>122,072</u>

* Includes estimated benefits expected from enhancing the machine's performance reflected in management budgets.

IE61. The machine's recoverable amount (i.e. value in use) is higher than the machine's carrying amount and depreciated historical cost (see Schedule 4). Therefore, K reverses the impairment loss recognised for the machine at the end of 20X0 so that the machine is carried at depreciated historical cost.

Schedule 4. Calculation of the reversal of the impairment loss at the end of 20X4

	<i>Machine CU</i>
Carrying amount at the end of 20X0 (Schedule 2) <i>End of 20X4</i>	121,128
Depreciation charge (20X1 to 20X4 – Schedule 5)	(48,452)
Costs to enhance the asset's performance	<u>25,000</u>
Carrying amount before reversal	<u>97,676</u>
Recoverable amount (Schedule 3)	<u>122,072</u>
Reversal of the impairment loss	<u>17,324</u>
Carrying amount after reversal	<u>115,000</u>
Carrying amount: depreciated historical cost (Schedule 5)	115,000 [*]

* The value in use of the machine exceeds what its carrying amount would have been at depreciated historical cost. Therefore, the reversal is limited to an amount that does not result in the carrying amount of the machine exceeding depreciated historical cost.

Schedule 5. Summary of the carrying amount of the machine

<i>Year</i>	<i>Depreciated historical cost CU</i>	<i>Recoverable amount CU</i>	<i>Adjusted depreciation charge CU</i>	<i>Impairment loss CU</i>	<i>Carrying amount after impairment CU</i>
20X0	150,000	121,128	0	(28,872)	121,128
20X1	135,000	nc	(12,113)	0	109,015
20X2	120,000	nc	(12,113)	0	96,902
20X3	105,000	nc	(12,113)	0	84,789
20X4	90,000		(12,113)		
enhancement	<u>25,000</u>		<u>-</u>		
	<u>115,000</u>	122,072	<u>(12,113)</u>	17,324	115,000
20X5	95,833	Nc	(19,167)	0	95,833

nc = not calculated as there is no indication that the impairment loss may have increased/decreased.

Example 7 – Impairment Testing Cash-generating Units with Goodwill and Minority Interests

In this example, tax effects are ignored.

Background

- IE62. Entity X acquires an 80 per cent ownership interest in Entity Y for CU1,600 on 1 January 20X3. At that date, Y's identifiable net assets have a fair value of CU1,500. Y has no contingent liabilities. Therefore, X recognises in its consolidated financial statements:
- goodwill of CU400, being the difference between the cost of the business combination of CU1,600 and X's 80 per cent interest in Y's identifiable net assets;
 - Y's identifiable net assets at their fair value of CU1,500; and
 - a minority interest of CU300, being the 20 per cent interest in Y's identifiable net assets held by parties outside X.
- IE63. The assets of Y together are the smallest group of assets that generate cash inflows that are largely independent of the cash inflows from other assets or groups of assets. Therefore Y is a cash-generating unit. Because this cash-generating unit includes goodwill within its carrying amount, it must be tested for impairment annually, or more frequently if there is an indication that it may be impaired (see paragraph 90 of SB-FRS 36).
- IE64. At the end of 20X3, X determines that the recoverable amount of cash-generating unit Y is CU1,000. X uses straight-line depreciation over a 10-year life for Y's identifiable assets and anticipates no residual value.

Testing Y for Impairment

- IE65. A portion of Y's recoverable amount of CU1,000 is attributable to the unrecognised minority interest in goodwill. Therefore, in accordance with paragraph 92 of SB-FRS 36, the carrying amount of Y must be notionally adjusted to include goodwill attributable to the minority interest, before being compared with the recoverable amount of CU1,000.

Schedule 1. Testing Y for impairment at the end of 20X3

	<i>Goodwill</i> CU	<i>Identifiable net assets</i> CU	<i>Total</i> CU
<i>End of 20X3</i>			
Gross carrying amount	400	1,500	1,900
Accumulated depreciation	-	(150)	(150)
Carrying amount	400	1,350	1,750
Unrecognised minority interest	100*	-	100
Notionally adjusted carrying amount	500	1,350	1,850
Recoverable amount			1,000
Impairment loss			850

* Goodwill attributable to X's 80% interest in Y at the acquisition date is CU400. Therefore, goodwill notionally attributable to the 20% minority interest in Y at the acquisition date is CU100.

- IE66. In accordance with paragraph 104 of SB-FRS 36, the impairment loss of CU850 is allocated to the assets in the unit by first reducing the carrying amount of goodwill to zero.

- IE67. Therefore, CU500 of the CU850 impairment loss for the unit is allocated to the goodwill. However, because the goodwill is recognised only to the extent of X's 80 per cent ownership interest in Y, X recognises only 80 per cent of that goodwill impairment loss (i.e. CU400).
- IE68. The remaining impairment loss of CU350 is recognised by reducing the carrying amounts of Y's identifiable assets (see Schedule 2).

Schedule 2. Allocation of the impairment loss for Y at the end of 20X3

<i>End of 20X3</i>	<i>Goodwill</i> CU	<i>Identifiable net assets</i> CU	<i>Total</i> CU
Gross carrying amount	400	1,500	1,900
Accumulated depreciation	-	(150)	(150)
Carrying amount	400	1,350	1,750
Impairment loss	400	(350)	(750)
Carrying amount after impairment loss	-	1,000	1,000

Example 8 - Allocation of Corporate Assets

In this example, tax effects are ignored.

Background

- IE69. Entity M has three cash-generating units: A, B and C. The carrying amounts of those units do not include goodwill. There are adverse changes in the technological environment in which M operates. Therefore, M conducts impairment tests of each of its cash-generating units. At the end of 20X0, the carrying amounts of A, B and C are CU100, CU150 and CU200 respectively.
- IE70. The operations are conducted from a headquarters. The carrying amount of the headquarters is CU200: a headquarters building of CU150 and a research centre of CU50. The relative carrying amounts of the cash-generating units are a reasonable indication of the proportion of the headquarters building devoted to each cash-generating unit. The carrying amount of the research center cannot be allocated on a reasonable basis to the individual cash-generating units.
- IE71. The remaining estimated useful life of cash-generating unit A is 10 years. The remaining useful lives of B, C and the headquarters are 20 years. The headquarters is depreciated on a straight-line basis.
- IE72. The recoverable amount (i.e. higher of value in use and fair value less costs to sell) of each cash-generating unit is based on its value in use. Value in use is calculated using a pre-tax discount rate of 15 per cent.

Identification of Corporate Assets

- IE73. In accordance with paragraph 102 of SB-FRS 36, M first identifies all the corporate assets that relate to the individual cash-generating units under review. The corporate assets are the headquarters building and the research centre.
- IE74. M then decides how to deal with each of the corporate assets:
- (a) the carrying amount of the headquarters building can be allocated on a reasonable and consistent basis to the cash-generating units under review; and
 - (b) the carrying amount of the research centre cannot be allocated on a reasonable and consistent basis to the individual cash-generating units under review.

Allocation of Corporate Assets

- IE75. The carrying amount of the headquarters building is allocated to the carrying amount of each individual cash-generating unit. A weighted allocation basis is used because the estimated remaining useful life of A's cash-generating unit is 10 years, whereas the estimated remaining useful lives of B and C's cash-generating units are 20 years.

Schedule 1. Calculation of a weighted allocation of the carrying amount of the headquarters building

	A	B	C	Total
<i>End of 20X0</i>	CU	CU	CU	CU
Carrying amount	100	150	200	450
Useful life	10 years	20 years	20 years	
Weighting based on useful life	1	2	2	
Carrying amount after weighting	100	300	400	800
Pro-rata allocation of the building	12% (100/800)	38% (300/800)	50% (400/800)	100%
Allocation of the carrying amount of the building (based on pro-rata above)	<u>19</u>	<u>56</u>	<u>75</u>	<u>150</u>
Carrying amount (after allocation of the building)	<u>119</u>	<u>206</u>	<u>275</u>	<u>600</u>

Determination of Recoverable Amount and Calculation of Impairment Losses

IE76. Paragraph 102 of SB-FRS 36 requires first that the recoverable amount of each individual cash-generating unit be compared with its carrying amount, including the portion of the carrying amount of the headquarters building allocated to the unit, and any resulting impairment loss recognised. Paragraph 102 of SB-FRS 36 then requires the recoverable amount of M as a whole (i.e. the smallest group of cash-generating units that includes the research centre) to be compared with its carrying amount, including both the headquarters building and the research centre.

Schedule 2. Calculation of A, B, C and M's value in use at the end of 20X0

Year	A		B		C		M	
	Future cash flows	Discount at 15%						
	CU	CU	CU	CU	CU	CU	CU	CU
1	18	19	9	8	10	9	39	34
2	31	23	16	12	20	15	72	54
3	37	24	24	16	34	22	105	69
4	42	24	29	17	44	25	128	73
5	47	24	32	16	51	25	143	71
6	52	22	33	14	56	24	155	67
7	55	21	34	13	60	22	162	61
8	55	18	35	11	63	21	166	54
9	53	15	35	10	65	18	167	48
10	48	12	35	9	66	16	169	42
11			36	8	66	14	132	28
12			35	7	66	12	131	25
13			35	6	66	11	131	21
14			33	5	65	9	128	18
15			30	4	62	8	122	15
16			26	3	60	6	115	12
17			22	2	57	5	108	10
18			18	1	51	4	97	8
19			14	1	43	3	85	6
20			10	1	35	2	71	4
Value in use	<u>199</u>		<u>164</u>		<u>271</u>		<u>720*</u>	

* It is assumed that the research centre generates additional future cash flows for the entity as a whole. Therefore, the sum of the value in use of each individual cash-generating unit is less than the value in

use of the business as a whole. The additional cash flows are not attributable to the headquarters building.

Schedule 3. Impairment testing A, B and C

<i>End of 20X0</i>	<i>A</i> CU	<i>B</i> CU	<i>C</i> CU
Carrying amount (after allocation of the building) (Schedule 1)	119	206	275
Recoverable amount (Schedule 2)	<u>199</u>	<u>164</u>	<u>271</u>
Impairment loss	<u>0</u>	<u>(42)</u>	<u>(4)</u>

IE77. The next step is to allocate the impairment losses between the assets of the cash-generating units and the headquarters building.

Schedule 4. Allocation of the impairment losses for cash-generating units B and C

<i>Cash-generating unit</i>	<i>B</i> CU	<i>C</i> CU
To headquarters building	(12) $(42 \times 56/206)$	(1) $(4 \times 75/275)$
To assets in cash-generating unit	<u>(30)</u> $(42 \times 150/206)$	<u>(3)</u> $(4 \times 200/275)$
	<u>(42)</u>	<u>(4)</u>

IE78. Because the research centre could not be allocated on a reasonable and consistent basis to A, B and C's cash-generating units, M compares the carrying amount of the smallest group of cash-generating units to which the carrying amount of the research centre can be allocated (i.e. M as a whole) to its recoverable amount.

Schedule 5. Impairment testing the smallest group of cash-generating units to which the carrying amount of the research centre can be allocated (i.e. M as a whole)

<i>End of 20X0</i>	<i>A</i> CU	<i>B</i> CU	<i>C</i> CU	<i>Building</i> CU	<i>Research center</i> CU	<i>M</i> CU
Carrying amount	100	150	200	150	50	650
Impairment loss arising from the first step of the test	<u>-</u>	<u>(30)</u>	<u>(3)</u>	<u>(13)</u>	<u>-</u>	<u>(46)</u>
Carrying amount after the first step of the test	<u>100</u>	<u>120</u>	<u>197</u>	<u>137</u>	<u>50</u>	<u>604</u>
Recoverable amount (Schedule 2)						<u>720</u>
Impairment loss for the 'larger' cash-generating unit						<u>0</u>

IE79. Therefore, no additional impairment loss results from the application of the impairment test to M as a whole. Only an impairment loss of CU46 is recognised as a result of the application of the first step of the test to A, B and C.

Example 9 – Disclosures about Cash-generating Units with Goodwill or Intangible Assets with Indefinite Useful Lives

The purpose of this example is to illustrate the disclosures required by paragraphs 134 and 135 of SB-FRS 36.

Background

- IE80. Entity M is a multinational manufacturing firm that uses geographical segments for reporting segment information. M's three reportable segments are Europe, North America and Asia. Goodwill has been allocated for impairment testing purposes to three individual cash-generating units—two in Europe (units A and B) and one in North America (unit C)—and to one group of cash-generating units (comprising operation XYZ) in Asia. Units A, B and C and operation XYZ each represent the lowest level within M at which the goodwill is monitored for internal management purposes.
- IE81. M acquired unit C, a manufacturing operation in North America, in December 20X2. Unlike M's other North American operations, C operates in an industry with high margins and high growth rates, and with the benefit of a 10-year patent on its primary product. The patent was granted to C just before M's acquisition of C. As part of accounting for the acquisition of C, M recognised, in addition to the patent, goodwill of CU3,000 and a brand name of CU1,000. M's management has determined that the brand name has an indefinite useful life. M has no other intangible assets with indefinite useful lives.
- IE82. The carrying amounts of goodwill and intangible assets with indefinite useful lives allocated to units A, B and C and to operation XYZ are as follows:

	<i>Goodwill</i>	<i>Intangible assets with indefinite useful lives</i>
	CU	CU
A	350	
B	450	
C	3,000	1,000
XYZ	1,200	
Total	<u>5,000</u>	<u>1,000</u>

- IE83. During the year ending 31 December 20X3, M determines that there is no impairment of any of its cash-generating units or group of cash-generating units containing goodwill or intangible assets with indefinite useful lives. The recoverable amounts (i.e. higher of value in use and fair value less costs to sell) of those units and group of units are determined on the basis of value in use calculations. M has determined that the recoverable amount calculations are most sensitive to changes in the following assumptions:

<i>Units A and B</i>	<i>Unit C</i>	<i>Operation XYZ</i>
Gross margin during the budget period (budget period is 4 years)	5-year US government bond rate during the budget period (budget period is 5 years)	Gross margin during the budget period (budget period is 5 years)
Raw materials price inflation during the budget period	Raw materials price inflation during the budget period	Japanese yen/US dollar exchange rate during the budget period
Market share during the budget period	Market share during the budget period	Market share during the budget period
Growth rate used to extrapolate cash flows beyond the budget period	Growth rate used to extrapolate cash flows beyond the budget period	Growth rate used to extrapolate cash flows beyond the budget period

- IE84. Gross margins during the budget period for A, B and XYZ are estimated by M based on average gross margins achieved in the period immediately before the start of the budget

period, increased by 5 per cent per year for anticipated efficiency improvements. A and B produce complementary products and are operated by M to achieve the same gross margins.

- IE85. Market shares during the budget period are estimated by M based on average market shares achieved in the period immediately before the start of the budget period, adjusted each year for any anticipated growth or decline in market shares. M anticipates that:
- (a) market shares for A and B will differ, but will each grow during the budget period by 3 per cent per year as a result of ongoing improvements in product quality.
 - (b) C's market share will grow during the budget period by 6 per cent per year as a result of increased advertising expenditure and the benefits from the protection of the 10-year patent on its primary product.
 - (c) XYZ's market share will remain unchanged during the budget period as a result of the combination of ongoing improvements in product quality and an anticipated increase in competition.
- IE86. A and B purchase raw materials from the same European suppliers, whereas C's raw materials are purchased from various North American suppliers. Raw materials price inflation during the budget period is estimated by M to be consistent with forecast consumer price indices published by government agencies in the relevant European and North American countries.
- IE87. The 5-year US government bond rate during the budget period is estimated by M to be consistent with the yield on such bonds at the beginning of the budget period. The Japanese yen/US dollar exchange rate is estimated by M to be consistent with the average market forward exchange rate over the budget period.
- IE88. M uses steady growth rates to extrapolate beyond the budget period cash flows for A, B, C and XYX. The growth rates for A, B and XYZ are estimated by M to be consistent with publicly available information about the long-term average growth rates for the markets in which A, B and XYZ operate. However, the growth rate for C exceeds the long-term average growth rate for the market in which C operates. M's management is of the opinion that this is reasonable in the light of the protection of the 10-year patent on C's primary product.
- IE89. M includes the following disclosure in the notes to its financial statements for the year ending 31 December 20X3.

Impairment Tests for Goodwill and Intangible Assets with Indefinite Lives

Goodwill has been allocated for impairment testing purposes to three individual cash-generating units—two in Europe (units A and B) and one in North America (unit C)—and to one group of cash-generating units (comprising operation XYZ) in Asia. The carrying amount of goodwill allocated to unit C and operation XYZ is significant in comparison with the total carrying amount of goodwill, but the carrying amount of goodwill allocated to each of units A and B is not. Nevertheless, the recoverable amounts of units A and B are based on some of the same key assumptions, and the aggregate carrying amount of goodwill allocated to those units is significant.

Operation XYZ

The recoverable amount of operation XYZ has been determined based on a value in use calculation. That calculation uses cash flow projections based on financial budgets approved by management covering a five-year period, and a discount rate of 8.4 per cent. Cash flows beyond that five-year period have been extrapolated using a steady 6.3 per cent growth rate. This growth rate does not exceed the long-term average growth rate for the market in which XYZ operates. Management believes that any reasonably possible change in the key assumptions on which XYZ's recoverable amount is based would *not* cause XYZ's carrying amount to exceed its recoverable amount.

Unit C

The recoverable amount of unit C has also been determined based on a value in use calculation. That calculation uses cash flow projections based on financial budgets approved by management covering a five-year period, and a discount rate of 9.2 per cent. C's cash flows beyond the five-year period are extrapolated using a steady 12 per cent growth rate. This growth rate exceeds by 4 percentage points the long-term average growth rate for the market in which C operates. However, C benefits from the protection of a 10-year patent on its primary product, granted in December 20X2. Management believes that a 12 per cent growth rate is reasonable in the light of that patent. Management also believes that any reasonably possible change in the key assumptions on which C's recoverable amount is based would *not* cause C's carrying amount to exceed its recoverable amount.

Units A and B

The recoverable amounts of units A and B have been determined on the basis of value in use calculations. Those units produce complementary products, and their recoverable amounts are based on some of the same key assumptions. Both value in use calculations use cash flow projections based on financial budgets approved by management covering a four-year period, and a discount rate of 7.9 per cent. Both sets of cash flows beyond the four-year period are extrapolated using a steady 5 per cent growth rate. This growth rate does not exceed the long-term average growth rate for the market in which A and B operate. Cash flow projections during the budget period for both A and B are also based on the same expected gross margins during the budget period and the same raw materials price inflation during the budget period. Management believes that any reasonably possible change in any of these key assumptions would *not* cause the aggregate carrying amount of A and B to exceed the aggregate recoverable amount of those units.

	Operation XYZ	Unit C	Units A and B (in aggregate)
Carrying amount of goodwill	CU1,200	CU3,000	CU800
Carrying amount of brand name with indefinite useful life	-	CU1,00	-
Key assumptions used in value in use calculations *			
o Key assumption	o Budgeted gross margins	o 5-year US government bond rate	o Budgeted gross margins
o Basis for determining value(s) assigned to key assumption	o Average gross margins achieved in period immediately before the budget period, increased for expected efficiency improvements. o Values assigned to key assumption reflect past experience, except for efficiency improvements. Management believes improvements of 5% per year are reasonably achievable.	o Yield on 5-year US government bonds at the beginning of the budget period. o Value assigned to key assumption is consistent with external sources of information.	o Average gross margins achieved in period immediately before the budget period, increased for expected efficiency improvements. o Values assigned to key assumption reflect past experience, except for efficiency improvements. Management believes improvements of 5% per year are reasonably achievable.
o Key assumption	o Japanese yen/ US dollar exchange rate during the budget period	o Raw materials price inflation	o Raw materials price inflation
o Basis for determining value(s) assigned to key assumption	o Average market forward exchange rate over the budget period. o Value assigned to key assumption is consistent with external sources of information.	o Forecast consumer price Indices during the budget period for North American countries from which raw materials are purchased. o Value assigned to key assumption is consistent with external sources of information.	o Forecast consumer price indices during the budget period for European countries from which raw materials are purchased. o Value assigned to key assumption is consistent with external sources of information.

* The key assumptions shown in this table for units A and B are only those that are used in the recoverable amount calculations for both units.

<ul style="list-style-type: none"> o Key assumption o Basis for determining value(s) assigned to key assumption 	<ul style="list-style-type: none"> o Budgeted market share o Average market share in period immediately before the budget period. o Value assigned to key assumption reflects past experience. No change in market share expected as a result of ongoing product quality improvements coupled with anticipated increase in competition. 	<ul style="list-style-type: none"> o Budgeted market share o Average market share in period immediately before the budget period, increased each year for anticipated growth in market share. o Management believes market share growth of 6% per year is reasonably achievable due to increased advertising expenditure, the benefits from the protection of the 10-year patent on C's primary product, and the expected synergies to be achieved from operating C as part of M's North American segment. 	
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